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Technical Series No. 7.

U. S. Department of Agriculture.

U. S. DEPARTMENT OF AGRICULTURE.

DIVISION OF ENTOMOLOGY.

REVISION OF THE TACHINIDÆ

OF

AMERICA NORTH OF MEXICO.

A

FAMILY OF PARASITIC TWO-WINGED INSECTS.

BY

D. W. COQUILLETT.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
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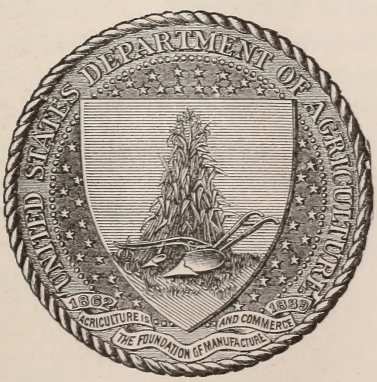

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LETTER OF TRANSMITTAL.

UNITED STATES DEPARTMENT OF AGRICULTURE,
DIVISION OF ENTOMOLOGY,
Washington, D. C., June 2, 1897.

SIR: I have the honor to submit for publication the seventh of the technical series of bulletins of this Division. It has been prepared by Mr. D. W. Coquillett, of the office force, and consists of a revision of the species of the parasitic flies belonging to the family Tachinidæ, which occur in the United States and Canada. The desirability of such a revision of these economically important flies has been apparent to all workers in economic as well as systematic entomology for many years. They are among the most important enemies of many of our most injurious insects, and their characters are so obscure that workers have had the greatest difficulty in separating one species from another, and the result is that the literature of economic entomology in particular contains many wrong determinations and absolute misstatements based upon such erroneous names. During the last eighteen years many species of Tachinidæ have been reared at this office from injurious insects which were being studied. It has been heretofore impossible to record the results of these rearings, on account of the confusion which existed in this family, and in its original conception this study of the group was undertaken in order to enable us to record the results of this biologic work. The records are now given in the shape of two tables—one of parasites and hosts and the other of hosts and parasites—and a glance at these tables will be instantly convincing as to the important and beneficial rôle which these insects play. With the clear and systematic diagnoses of the genera and species which Mr. Coquillett has prepared, any economic entomologist should be able to determine just what species of Tachina flies are assisting him in his work against injurious insects.

Respectfully,

L. O. HOWARD,
Entomologist.

Hon. JAMES WILSON,
Secretary of Agriculture.

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REVISION OF THE TACHINIDÆ OF AMERICA NORTH OF MEXICO.

NATURE AND SCOPE OF THE WORK.

The present paper is the result of several years' study, and is based upon the large series of specimens contained in the National Museum collection, mainly received from this office, supplemented by those in my own and those received for study and identification from various correspondents, among whom may be mentioned: Mr. C. W. Johnson, Dr. Garry deN. Hough, Mrs. A. T. Slosson, Dr. W. A. Nason, Mr. Charles Robertson, Mr. Theodore Pergande, Mr. F. H. Chittenden, Prof. H. E. Weed, Mr. R. W. Doane, and L'Abbé Bégin. The series in the National Museum collection is especially valuable, containing as it does a large number of bred specimens, which, more than anything else, enables us to correctly judge of the extent to which the various specimens of the same species will vary among themselves. This collection also contains a duplicate set of a series of specimens sent to Brauer and Bergenstamm, of Vienna, Austria, in exchange for a named series of European forms, and the latter have been very valuable for comparison with our own genera and species. These authors returned names, principally generic, of the series sent to them, and in the following pages I have indicated these identifications as "*in litt.*" Mr. C. H. T. Townsend kindly sent to the Museum cotypes of many of his new species, and Mr. Charles Robertson generously donated specimens from the same series as those from which Mr. Townsend described several of his new forms.

The region covered by this paper includes all of this country north of Mexico, but does not take in any of the West Indies. When the faunas of these two regions have been carefully compared with our own, many additional species will no doubt be found to inhabit two or even all of these regions.

HABITS OF THE FAMILY.

Among the fifty odd families into which the Diptera of this country have been divided, the Tachinidæ is by far the most beneficial, judged from the standpoint of an agriculturist. The only other family that at all competes with it for this honor is the Syrphidæ; but in this family

only a comparatively small number of genera are directly beneficial by preying upon plant-lice, and even in this respect their services could in most instances be dispensed with, since, as a general rule, the plant-lice are held in check by the larvæ of ladybirds assisted by several kinds of internal parasites belonging to the hymenopterous families Braconidæ, Cynipidæ, and Chalcididæ.

So far as at present known the Tachinidæ prey upon living insects only, and by far the greater number of these are the leaf-eating caterpillars of butterflies and moths, a group that contains a large number of our most injurious insects; and the numbers of these destroyed in a single season by these parasites is almost beyond computation. Unlike the parasitic Hymenoptera, each species of which as a rule confines its attacks to a single group which in some cases is restricted to one genus, it not infrequently happens that the same species of Tachina fly attacks several different families of insects, while quite a number are known to attack two and even three different orders of insects—Lepidoptera, Hymenoptera, and Coleoptera. This has been observed not only in our own country but also in Europe.

At present, only five different orders of insects—the three above mentioned and the Orthoptera and Hemiptera—are known to be attacked by the Tachinidæ in this country, but in Europe several cases are reported of their also attacking Diptera of the family Tipulidæ. The Lepidoptera, Hymenoptera, and Diptera are preyed upon in their preparatory stages only, whereas it is usually only the adults of the Orthoptera, Hemiptera, and Coleoptera that are attacked.

The tachinid eggs are attached by a viscid substance to the surface of the host, and the full-grown larvæ usually enter the earth to pass through their transformations. The larvæ are of the usual maggot form, large and truncated at one end and tapering to a point in the opposite direction. Pupation takes place in the hardened skin of the larva, which assumes a nearly cylindrical form with rounded ends, and is known as a puparium. In issuing, the adult fly breaks away the entire end of the puparium. It was formerly supposed that any caterpillar upon which one of these flies had fastened an egg was doomed to certain destruction, but actual observation has shown that this is not always the case, since in many instances the caterpillar, by molting or casting off its skin, rids itself of the egg before the latter has hatched out and the young larva made its way into the body of the caterpillar. In this respect the parasitism of these insects is not so certain as is the case with those hymenopterous parasites which puncture the body of their victim and deposit the egg within.

In regard to the possession and exercising of that faculty commonly termed instinct, the Tachina flies appear to be far behind the parasitic Hymenoptera. The latter seem to be able to ascertain by a touch of their antennæ whether or not an insect has already been parasitized, and only rarely insert an egg in the body of an insect that already

contains an egg or larva of a parasite, nor has one of them been known to consign a greater number of eggs to an insect than the number of larvæ which that insect can maintain. On the contrary, a Tachina fly has repeatedly been known to attach to a caterpillar three or four times as many eggs as the number of larvæ the caterpillar can maintain. Owing to this fact, a great many tachinid larvæ must necessarily perish for want of food, while several which have barely had a sufficient quantity to keep them alive will be considerably dwarfed in size, as compared to their more fortunate brothers, and thus it will sometimes happen that some of the adult flies will be only one-half, and in rare instances even only one-third, as long as others which were the progeny of the same parent. Certain systematic writers, who have had no experience in rearing these flies, lay great stress on a difference in size as indicative of a distinct species; but our breeding records have abundantly demonstrated the fact that one specimen may be fully three times as long as an other and yet both belong to one and the same species.

TACHINID FLIES AND THEIR HOSTS.

The following is a list of the Tachina flies that have been bred by this Division, together with the hosts from which they were bred. By far the greater number of these were reared in the department insectary, in charge of Mr. Theo. Pergande. A few additional species, specimens of which have been studied by the writer, are included in this list. Of the published records, only those are included where the flies have been bred from other hosts than those from which this Division and its correspondents have reared them; such species are indicated by asterisks (*) in addition to the names of the persons who reared them and to the published references. A few of the breeding records, which are evidently erroneous, are preceded by a mark of interrogation (?).

The list is in two parts, arranged alphabetically:

I.—Parasites and their hosts.

Parasites.	*Host insects.*
Acemyia dentata *Coq*	Chortophaga viridifasciata *DeG.* Bred by T. Pergande June 26, 1877, from an adult collected June 11 at St. Louis, Mo.
Admontia demylus *Walk*	Lophyrus abbotii *Leach.* Issued June 24, 1882, from a larva collected by E. A. Schwarz, in Maryland.
	Lophyrus lecontei *Fitch.* Issued May 6, 1886, from a larva collected by T. Pergande in Virginia, October 19, 1885.
Admontia retiniæ *Coq*	Retinia sp. Bred April 17, 1888, by A. Koebele, Alameda, Cal., from a caterpillar found in a bud on *Pinus insignis.*
Amobia distincta *Town*	Acronycta dactylina *Grote.* Issued March 24, 1884, from a caterpillar collected by A. Koebele at Holderness, N. H., September 26, 1883.

Aphria ocypterata *Town* .....Carneades messoria *Harr.* Bred by C. V. Piper, Pullman, Wash.

Archytas analis *Fabr* .....*Clisiocampa californica *Stretch.* (Gillette, Trans. Amer. Ent. Soc., Vol. XXII, p. 70.)

Archytas aterrima *Desv*.....Acronycta occidentalis *G. & R.* Issued August 13, 1883, from a chrysalis collected July 10 by A. Koebele in Virginia.

Acronycta ovata *Grote.* Issued May 13, 1886, from a caterpillar received from J. G. Barlow, Cadet, Mo.

Cerura sp. Bred by O. Lugger April 11, 1874, from a caterpillar received from G. W. Letterman, October 12, 1873.

Lagoa crispata *Pack.* Issued June 5, 1885, from a cocoon received October 22, 1884, from J. M. Shaffer, Keokuk, Iowa. Another issued February 15, 1890, from a cocoon collected in Washington, D. C., in September, 1889.

Belvosia bifasciata *Fabr*.....Citheronia regalis *Fabr.* Issued July 17, 1873, and June 24, 1881.

Dryocampa rubicunda *Fabr.* Bred August 15, 1872, by O. Lugger, at St. Louis, Mo., from a caterpillar collected July 3.

Hemileuca sp. Bred in 1889 by A. Koebele, from a caterpillar found at Lancaster, Cal.

Belvosia unifasciata *Desv*.....Leucania unipuncta *Harr.* Bred in 1896 by M. V. Slingerland, at Ithaca, N. Y.

Biomyia georgiæ *Br. & Berg*....Calosoma calidum *Fabr.* Bred by A. F. Burgess June 28, 1896, from a beetle found June 6 at Amherst, Mass.

Calosoma peregrinator *Guér.* Bred by the writer June 25, 1888, at Los Angeles, Cal.; the tachinid puparia were found in a dead beetle June 17.

Blepharipeza adusta *Loew* .....Arachnis picta *Pack.*

Clisiocampa constricta *Stretch.* Bred in January and February, 1891, by A. Koebele from caterpillars collected at St. Helena, Cal.

Clisiocampa thoracica *Stretch.* Bred in 1890, by A. Koebele, from caterpillars collected at Glen Ellen, Cal.

Halisidota edwardsii *Pack.* Bred by the writer at Los Angeles, Cal.

Leucarctia acræa *Drury.* (H. Edwards, in Loew's Dipt. Amer. sept. indig., Cent. X, No. 67.)

Brachycoma davidsoni *Coq*.....Bombus fervidus *Fabr.* Bred by Dr. A. Davidson, Los Angeles, Cal.; the tachinid larvæ fed on those of the Bombus.

Celatoria diabroticæ *Shimer*....Diabrotica 12-punctata *Oliv.* Issued August 3, 1889, from adult beetles collected by T. Pergande in Washington, D. C.

Diabrotica soror *Lec.* Bred by the writer July 5, 1888, at Los Angeles, Cal.; the tachinid larva issued from an adult beetle June 21. Another issued August 15 and was changed to a fly August 28. Other flies issued August 29 and 31. Also bred in June, 1889, by A. Koebele from an adult collected in Santa Clara County, Cal.

Celatoria diabroticæ *Shimer*.....Diabrotica vittata *Fab.* Bred July 21 and August 5, 1897, by F. H. Chittenden from an adult collected at Brookland, Md.

Chætogædia crebra *v. d. W.*.....Agrotis sp. Bred July 11, 1888, by the writer from a caterpillar found June 2 at Los Angeles, Cal.

Taeniocampa rufula *Grote.* Bred July 29, 1888, by the writer from a caterpillar found June 9 at Los Angeles, Cal.

Chætogædia monticola *Bigot* ....Carneades sp. Bred by W. G. Wait, Kailua, N. Kona, Hawaii.

Peridroma saucia *Hueb.* Issued June 14, 1895, from a chrysalis received May 13 from William Chappelow, Monrovia, Cal.

Pyrameis cardui *Linn.* Bred by the writer at Los Angeles, Cal.

Cistogaster immaculata *Macq*...*(?)Leucania unipuncta *Haw.* (Forbes, Psyche, June, 1893, p. 466.)

Cryptomeigenia theutis *Walk*...Lachnosterna inversa *Horn.* Issued March 23, 1893, from an adult beetle collected by T. Pergande, in May, 1892, at Washington, D. C.

Echinomyia algens *Wied*.....*Hadena lignicolor *Guen.* (Gillette, Trans. Amer. Ent. Soc., Vol. XXII, p. 70.)

Epigrimyia floridensis *Town* ....Plodia sp. Bred by T. D. A. Cockerell, Mesilla, N. Mex.

Euphorocera claripennis *Macq*..Acronycta hamamelis *Guen.* Issued August 8, 1882, from a caterpillar collected July 23, by A. Koebele, in Virginia.

Agraulis vanillæ *Linn.* Bred September 12, 1893, by Dr. A. Davidson, Los Angeles, Cal.

Aletia argillacea *Hueb.* Issued August 11, 1879.

Anisota senatoria *S. & A.* Issued June 13, 1880.

*Apatura celtis *Bd.-Lec.* (Riley, in Scudder's Butterflies of New England, Vol. III, p. 1922.)

Apatura clyton *Bd.-Lec.* Bred by H. A. Morgan, Baton Rouge, La.

Arctia docta *Walk.* Bred June 26, 1883, by the writer at Anaheim, Cal.

Ceratomia catalpæ *Boisd.* Issued January 7 and October 5, 1894, and January 5 and 26 and February 20, 1895.

Chrysomela multipunctata *Say.* Bred July 14, 1872, by O. Lugger from a larva found July 1 at St. Louis, Mo.

Clisiocampa disstria *Hueb.* Bred by C. H. Fernald, Amherst, Mass

Crocota rubicundaria *Hueb.* Issued October 25, 1882, from a caterpillar collected March 15 by A. Koebele at Archer, Fla.

Datana contracta *Walk.* Bred August 30, 1886, by F. M. Webster, Lafayette, Ind.; one caterpillar bore 115, another 131, a third 213, and a fourth 228 eggs of the Tachina fly.

Empretia stimulea *Clem.* Issued July 24, 1885, from a cocoon received September 3, 1884, from J. B. Smith, Monticello, Ind.

Euphorocera claripennis *Macq*..Epilachna borealis *Fabr.* Bred by Dr. Riley, September 10, 1871, from a larva collected August 18 in New York or New Jersey.

Eubolina? sp. Bred by A. Koebele from a caterpillar found on *Prosopis juliflora* in Panamint Valley, California, in 1891.

Feltia herilis *Grote.* Issued May 11, 13, and 18, 1895, from caterpillars received April 13 from W. D. Kierolf, Jackson, Tenn. Also June 6, 1895, from a caterpillar received May 8 from S. Merrill, Mine la Motte, Mo.

Halisidota tessellata *S. & A.* Issued August 24, 1896, from a caterpillar received August 1 from L. Collins, Brooklyn, N. Y.

Harrisina americana *Harris.* Issued June 26 and 27, 1891, from a caterpillar received June 13 from J. F. Wilson, Poulan, Ga.

Hemileuca artemis *Pack.* Issued April 30, 1894, from a caterpillar received June 6, 1893, from T. D. A. Cockerell, Las Cruces, N. Mex.

Hemileuca electra *Wright.* Bred June 25, 1887, by the writer from a caterpillar collected April 12 near Riverside, Cal.; the tachinid larva issued June 5.

Lagoa sp. Issued October 3, 1878.

Lophyrus sp. Issued March 5, 1889, from a larva received September 28, 1888, from G. W. Martin, Chattanooga, Tenn.

Mamestra trifolii *Rott.* Bred July 4, 1876, by T. Pergande from a caterpillar received June 8 from M. G. Gant, Parksville, Mo. Issued November 17 and 18, 1881, from a caterpillar collected October 12 by Dr. Howard in Washington, D. C.

Œdemasia concinna *S. & A.* Bred August 23, 1876, by T. Pergande from a caterpillar received August 16 from John Barritt, East Canton, Mo.

Orgyia leucostigma *S. & A.* Issued September 21, 1895, from a chrysalis collected September 6; and September 23 from a chrysalis collected September 6; and September 24 from caterpillars collected September 4, 7, and 11; and September 30 from a caterpillar collected September 11, 1895. Also issued April 16 and in July, 1896. All were from Orgyias collected at Washington, D. C.

Phasiana neptata *Guen.* Bred July 2, 1886, by the writer at Los Angeles, Cal.; the tachinid larva issued June 2.

*Vanessa antiopa *Linn.* (Dimmock, in Scudder's Butterflies of New England, Vol. III, p. 1922.)

Eutrixa masuria *Walk*.....Lachnosterna arcuata *Smith.* Issued March 12, 16, and 23, 1895, from an adult beetle collected in Washington, D. C.

Exorista affinis *Fall* .....Arctia? sp. Issued December 16, 18, and 19, 1889, from a caterpillar stated to be European, received December 2 from O. Lugger, St. Anthony Park, Minn.

Exorista blanda *O. S*.....Euclea cippus *Cram.* Issued June 24, 1884, from a caterpillar collected October 9, 1883, by A. Koebele, in Virginia.

*Nisoniades brizo *Bd.-Lec.* (Scudder, Butterflies of New England, Vol. III, p. 1919.)

*Pyrameis cardui *Linn.* (Riley, Canadian Entomologist, Vol. XIX, p. 163.)

Exorista boarmiæ *Coq*.....Boarmia pampinaria *Guen.* Issued September 12, 1883, from a caterpillar received August 13 from J. B. Smith, Cotuid, Mass.

Loxostege similalis *Guen.* Issued July 16, 1886, from a chrysalis received from W. F. Avera, Camden, Ark.

Exorista ceratomiæ *Coq*.....Ceratomia undulosa *Walk.* Bred May 28, 1875, by Dr. Riley, from a caterpillar found October 2, 1874, at St. Louis, Mo.

Omphalocera cariosa *Led.* Issued July 2, 1892, from a caterpillar received from W. S. Newlon, Oswego, Kans.

Pempelia sp. Issued May 28, 1889, from a caterpillar found by H. Allison on a hackberry tree in October, 1888, at Fort Worth, Tex.

Pyralid. Issued in September, 1890, from a caterpillar found on poison ivy by J. G. Barlow, Cadet, Mo.

Exorista cheloniæ *Rond*.....Arachnis picta *Pack.* Bred in 1882 by the writer at Anaheim, Cal.

Arctia docta *Walk.* Bred June 26, 1883, by the writer at Anaheim, Cal.; the tachinid larva issued June 17.

Exorista confinis *Fall*.....*Chrysophanus xanthoides *Boisd.* (Skinner, Entomological News, December, 1891, p. 198.)

Dendrobinus howardi *Dyar.* Issued April 20, 1895, from a caterpillar received April 10 from J. W. Toumey, Tucson, Ariz.

Lycæna exilis *Boisd.* Bred by T. D. A. Cockerell, Las Cruces, N. Mex.

*Lycæna pseudargiolus *Bd.-Lec.* (Scudder, Butterflies of New England, Vol. III, p. 1920.)

Lycæna sp. Issued May 24, 1886, from a caterpillar found on a hickory tree May 9, by T. Pergande, in the District of Columbia.

*Thecla calanus *Hueb.* (Saunders, Can. Entomologist, Vol. XIX, p. 166.)

Exorista eudryæ *Town*.....Acronycta hamamelis *Guen.* Issued August 8, 1882, from a caterpillar found by A. Koebele, July 23, in Virginia.

Acronycta luteicoma *G. & R.* Bred by Dr. Riley December 31, 1871, at St. Louis, Mo.

Acronycta sp. Bred April 11, 1874, by O. Lugger, from a caterpillar collected April 5, 1873, at St. Louis, Mo. Issued July 24, 1882, from a caterpillar found by A. Koebele, July 9, on an oak tree at Hyattsville, Md. Another issued May 10, 1883, from a caterpillar found on an oak tree.

Agrotis ypsilon *Rott.* Issued February 15, 1875.

Exorista eudryæ *Town*.....Alypia octomaculata *Hueb.* Issued June 2, 1884, from a caterpillar received from Missouri.

Eudryas unio *Hueb.* Bred by H. S. Jewett, Dayton, Ohio.

Heterocampa marthesia *Cram.* Bred by O. Lugger, at St. Louis, Mo.

Hyperchiria io *Fab.* Issued May 31, 1895.

Pyrameis atalanta *Linn.* Bred by P. S. Sprague, Boston, Mass.

Exorista flavirostris *v. d. W.*.....Lagoa opercularis *S. & A.* Issued June 30, 1880, from a cocoon received March 4, from R. S. Turner, Fort George, Fla. Also January 21 and 22, 1889, from a caterpillar received from T. M. McMeekin, McMeekin, Fla. Also December 3 and 4, 1889, from a caterpillar received from Dr. Neal, Florida; and July 31, 1893, from a cocoon received from E. W. Rogers, Jennings, Va. Bred May 11, 1891, by H. E. Weed, Agricultural College, Mississippi. Issued June 2, 1896, from caterpillars collected November 25, 1895, by E. A. Schwarz, at Victoria, Tex.

Exorista futilis *O. S.*.....Clisiocampa thoracica *Stretch.* Bred in 1890, by A. Koebele, at Glen Ellen, Cal.

Hadena apamiformis *Grote.* Issued May 16, 1884.

*Pyrameis atalanta *Linn.* (Harris and Scudder, Can. Entomologist, Vol. XIX, p. 162.)

Exorista griseomicans *v. d. W.*..Orgyia leucostigma *Sm. & Abb.* Issued July 17, 1896, from a cocoon collected in Washington, D. C.

Exorista isæ *Coq*.....Isa inornata *G. & R.* Issued June 16, 1886, from a caterpillar collected September 29, 1885, by O. Lugger.

Exorista lobeliæ *Coq*.....Acronycta hamamelis *Guen.* Issued August 8, 1882, from a caterpillar collected by A. Koebele in Virginia.

Acronycta lobeliæ *Guen.* Issued April 21, 1885.

Acronycta sp. Issued July 28 and 31, 1882, from a caterpillar found on an oak tree in Maryland, July 2, by A. Koebele.

Orgyia leucostigma *S. & A.* Issued July 21, 1897, from a cocoon collected in Washington, D. C.

Exorista petiolata *Coq*.....Lophyrus sp. Issued June 23, 1883, from a larva collected June 3, by Dr. Riley, in Virginia.

Exorista pyste *Walk*.....Hyponomeuta multipunctella *Clem.* Issued June 20 and 23, 1884, from a caterpillar collected June 1, by A. Koebele, in Washington, D. C.

Mineola indiginella *Zell.* Issued July 9, 1886, from a caterpillar received from O. S. Roberts, Oxford, Ind. And June 18, 1897, from a caterpillar received June 10, from W. A. Fisher, Moselle, Mo.

Pyralid. Issued June 22, 1886, from a caterpillar found May 9, on a hickory tree, by T. Pergande, at Washington, D. C. Also October 6, 1896, from a caterpillar found August 10, on cabbage, by H. M. Simons, Charleston, S. C.

*Thecla autolycus *Edw.* (Belfrage, in Scudder's Butterflies of New England, Vol. III, p. 1921.)

Exorista pyste *Walk*.....Tortricid. Issued June 26, 1889, from a caterpillar found June 21, on a cedar tree by H. T. Fuchs, Tiger Mills, Tex.

Exorista vulgaris *Fall*.....* Pieris rapæ *Linn.* (Lintner, Can. Entomologist, Vol. XIX, p. 164.)

* Pyrausta penitalis *Grote.* (Forbes, Pysche, June, 1893, p. 467.)

Frontina aletiæ *Riley*.....Aletia argillacea *Hueb.* Issued November 23, 1878. Also bred August 21 to 31, 1880, by H. G. Hubbard, at Centerville, Fla.

Cerura sp. Bred by A. Koebele from a caterpillar found on willow at Los Angeles, Cal.

Dasylopha anguina *S. & A.* Bred by E. Burgess, Beverly, Mass.

Halisidota maculata *Harr.* Bred in February, March, and April, 1889, by the writer at Los Angeles, Cal.

Halisidota tessellata *S. & A.* Issued August 14 and 15, 1896, from a caterpillar received from L. Collins, Brooklyn, N. Y.

Lagoa opercularis *S. & A.* Issued November 27, 1891, from a caterpillar received November 12 from H. Stevens, Brazaria, Tex.

Orgyia leucostigma *S. & A.* Issued September 18, 1895, from a caterpillar collected September 7; and September 20 from a caterpillar collected September 5, the tachinid larva having issued September 9. Also September 23 from a cocoon collected September 6. Also September 30 from a caterpillar collected September 13; the tachinid larva issued September 18, 1895. Also issued in January, February, and July, 1896. All were from Orgyia collected at Washington, D. C.

Frontina archippivora *Will*.....Agrotis ypsilon *Rott.*

Clisiocampa constricta *Stretch.* Bred by Dr. A. Davidson, Los Angeles, Cal.

Clisiocampa pluvialis *Dyar.* Bred by C. V. Piper, Pullman, Wash.

Danais archippus *Fabr.* Bred by C. W. Johnson, Philadelphia, Pa.; and C. V. Piper, Pullman, Wash.

Laphygma flavimaculata *Harv.* Issued May 29, 1897, from a caterpillar received May 17 from S. A. Pease, San Bernardino, Cal.

Pyrameis cardui *Linn.* Bred by the writer at Los Angeles, Cal.

Pyrameis carye *Hueb.* Bred February 20, 1888, by A. Koebele, Alameda, Cal.; also bred by the writer at Los Angeles, Cal.

Frontina armigera *Coq*.....Heliothis armiger *Hueb.* Bred June 14, 1888, by the writer at Los Angeles, Cal.; the tachinid larva issued June 1.

Frontina frenchii *Will*.....Anisota senatoria *S. & A.* Issued in August, 1879, and June 21, 1880. Also July 7, 16, 18, and 22, 1896, from caterpillars collected by F. C. Pratt at Lakeland, Md., September 2, 1895.

Frontina frenchii *Will*.....Anisota virginiensis *Drury*. Issued May 27 and June 7, 1874.

Attacus cecropia *Linn*. Bred March 17, 1890, by G. Valentine, Haramontown, N. J.

Attacus sp. Bred June 21, 1891, by the writer, from a Cecropia-like cocoon on *Ceanothus* sp., near Los Angeles, Cal.; the tachinid larva issued May 26.

Bombus sp. Bred from a nest; Canada.

Ceratomia catalpæ *Boisd*. Issued in August, 1890, from a caterpillar collected in the District of Columbia.

Citheronia regalis *Fabr*.

Clisiocampa americana *Harr*. Issued July 17, 1893, from a cocoon received July 14 from G. B. King, Lawrence, Mass.

Clisiocampa californica *Stretch*. Bred in May, by A. Koebele, Alameda, Cal.

Clisiocampa constricta *Stretch*. Bred July 5, 1889, by the writer, from a caterpillar collected May 5 near Los Angeles, Cal.

*Clisiocampa disstria *Hueb*. (Harvey, Psyche, May, 1891, p. 85.)

Clisiocampa thoracica *Stretch*. Bred in 1890 by A. Koebele from a caterpillar found at Glen Ellen, Cal.

Dasylopha anguina *S. & A*. Bred by E. Burgess, Beverly, Mass.

Datana ministra *Drury*. Issued May 2, 21, 25, and 30, 1874. Also September 11, 1893, and July 17 and August 6, 1894, from caterpillars received July 24, 1893, from A. W. Butler, Brookville, Ind.

Datana sp. Issued May 28, 1875, from a caterpillar found on a birch tree.

Dissosteira carolina *Linn*. Three were bred April 22, 1874, by O. Lugger, from adults collected at St. Louis, Mo., the previous year.

Dryocampa rubicunda *Fabr*. Issued June 30, 1896, from a caterpillar collected by F. C. Pratt, July 11, 1895, at Lakeland, Md.

*Euchætes egle *Drury*. (Forbes, Psyche, June, 1893, p. 467.)

Heliothis armiger *Hueb*.

Hyperchiria io *Fabr*. Bred October 11, 1879, by G. H. French, Carbondale, Ill.

Hypsoropha hormos *Hueb*. Issued July 18 and 23, 1884.

Ichthyura inclusa *Hueb*. Bred March 11, 1875, by O. Lugger, from a caterpillar collected at St. Louis, Mo., the previous year. Also bred in 1889 by F. M. Webster, Lafayette, Ind. Issued July 27, 1893, from a cocoon received July 18.

Orgyia leucostigma *S. & A*. Issued in July, 1896, from caterpillars collected at Washington, D. C.

*Papilio turnus *Linn*. (Scudder, Butterflies of New England, Vol. III, p. 1923.)

Frontina frenchii *Will*.....Pyralid. Issued April 28 and May 8, 1883, from caterpillars found October 20, 1882, on an alder tree in Virginia by A. Koebele.

*Pyrameis cardui *Linn.* Bred by F. M. Webster; Townsend *in litt.*

*Schizura unicornis *S. & A.* (F. A. Marlatt, Psyche, December, 1891, p. 187.)

Smerinthus cerisyi *Kirby.* Bred by A. Koebele, in 1887, from a caterpillar found at St. Helena, Cal.

Telea polyphemus *Cram.* Issued November 15, 1882, and May 3, 1884. Also bred by S. Baldy, Catawissa, Pa.

Frontina irrequieta *Walk*.....Papilio thoas *Linn.* Issued February 23, 1880, from a chrysalis received January 27 from Prof. J. H. Comstock, Jacksonville, Fla.

Frontina violenta *Walk*.....Philampelus vitis *Linn.* Bred October 8, 1884, by T. Pergande, at Washington, D. C.

*Vanessa antiopa *Linn.* (Riley, in Scudder's Butterflies of New England, Vol. III, p. 1924.)

Gonia capitata *DeG*.....Hadena devastatrix *Brace.* Bred July 29, 1890, by C. P. Gillette, Ames, Iowa.

Laphygma frugiperda *S. & A.* Bred in 1880 by Lyne Starling, Sunnyside, Ark.

Peridroma saucia *Hueb.* Issued June 14, 1895, from a caterpillar received May 13 from Wm. Chappelow, Monrovia, Cal.

Hilarella fulvicornis *Coq*.....Acridiidid. Issued March 4, 1884, from a puparium found among locust eggs at Boscowen, N. H., September 14, 1883, by A. Koebele.

Hyphantrophaga hyphantriæ *Town*.....*Eucaterva variaria *Grote.* (Townsend, Psyche, April, 1892, p. 258.)

Hyphantria cunea *Drury.* Bred by C. H. T. Townsend, September 1, 1891, at Las Cruces, N. Mex.

*Vanessa milberti *Godt.* (Gillette, Trans. Amer. Ent. Soc., Vol. XXII, p. 75.)

Hypostena barbata *Coq*.....Coptocycla clavata *Fabr.* Bred from a larva, in July, 1897, by W. G. Johnson, College, Md.

Disonycha xanthomelæna *Dalm.* Bred June 26, 1897, by F. H. Chittenden, from an adult beetle collected at Washington, D. C.

Hypostena floridensis *Town*.....Blastobasis nubilella *Zell.* Issued June 26, 1895.

Schizocera ebena *Nort.* Issued August 19 and September 19, 23, and 27, 1887, from larvæ received August 18 from C. Werckle, Ocean Springs, Miss.

Hypostena tortricis *Coq*.....Tortricid. Bred August 15, 1890, by the writer from a caterpillar found July 26 in a nest of leaves on *Solanum douglasi* at Los Angeles, Cal.

Hypostena variabilis *Coq*.....Carpocapsa pomonella *Linn.*

Pyrausta penitalis *Grote.* Issued August 15, 1883, from a caterpillar collected August 1, by A. Koebele, in Washington, D. C.

Tenthredinid. Issued May 27, 1884, from a larva found on an alder tree; also August 20, 1896, from a larva found on *Ipomœa pandurata* in Missouri.

Jurinia metallica *Desv*.....Ecpantheria scribonia *Stoll.* Bred June 10, 1880, by Dr. Turner, Fort George, Fla.

Leskiomima tenera *Wied*.....Pyralid. Issued July 3, 1885, from a caterpillar found by T. Pergande, May 30, on a fern in Virginia.

Linnæmyia comta *Fall*.....Agrotis ypsilon *Rott.* Bred July 19, 1887, by the writer from a caterpillar received June 7 from Mrs. M. Stafford, Napa County, Cal.; the tachinid larva issued July 1.

Carneades messoria *Harr.* Bred by C. V. Piper, Pullman, Wash.

Macquartia pristis *Walk*.....Halisidota argentata *Pack.* Issued June 2, 1893, from a caterpillar received May 18 from A. Koebele, Aurora Mills, Oreg.

*Limacodes sp. (Comstock, Psyche, June, 1892, p. 275.)

Masicera eufitchiæ *Town*.....*Eufitchia ribearia *Fitch.* (Gillette, Trans. Amer. Ent. Soc., Vol. XIX, p. 287.)

* Hyphantria cunea *Drury.* (Forbes. Psyche, June, 1893, p. 467.)

Masicera myoidæa *Desv*.....Arzama obliquata *G. & R.* Issued May 12 and 13, 1882, and June 21, 1884.

Hydrœcia nitela *Guen.* Issued July 26, 1890, from a caterpillar received July 25 from F. A. Brown, Everett, Mass.

Masicera tenthredinidarum *Town*.....* Tenthredinid. (Harrington, Trans. Amer. Ent. Soc., Vol. XIX, p. 286.)

Microphthalma disjuncta *Wied*..Lachnosterna arcuata *Smith.* Issued October 15, 1891, from a puparium found in the skin of a larva August 12, by T. Pergande, at Washington, D. C.

Myiophasia ænea *Wied*.....Balaninus nasicus *Say.* Issued July 22, 1895.

Chalcodermus sp. Bred by H. A. Morgan, Baton Rouge, La.

Conotrachelus juglandis *Lec.* Issued July 16, 1886, from a larva found by T. Pergande in Washington. Also June 29 and 30, 1896, from a larva received June 2 from J. G. Barlow, Cadet, Mo.

* (?)Leucania unipuncta *Haw.* (Forbes, Psyche, June, 1893, p. 467.)

* Sphenophorus parvulus *Gyll.* (Forbes, *loc. cit.*)

Myiophasia robusta *Coq*.....Sphenophorus robustus *Horn.* Bred in October, 1886, by A. Koebele, from a larva found at Los Angeles, Cal.

Ocyptera carolinæ *Desv*.....* Acridiidid. (Forbes, Psyche, June, 1893, p. 466.)

* (?)Leucania unipuncta *Haw.* (Forbes, loc. cit., p. 466.)

Pachyophthalmus floridensis *Town*.....Isodonta elegans *Sm.* Bred by Dr. A. Davidson, Los Angeles, Cal.

Pelopæus cementarius *Drury.* Bred by the writer in October, 1891, 14 specimens from a nest found November 11, 1890, near Rincon, Cal. Also bred July 28, 1892, by Dr. A. Davidson from the nest of a burrowing wasp at Los Angeles, Cal. Issued July 27, 1897, from a nest received that day from A. Oemler, Wilmington Island, Ga.

Pachyophthalmus floridensis *Town*.....*Trypoxylon politum *Say*. (Webster, Bull. Ohio Exper. Station, Technical Series, Vol. I, No. 3, p. 158.)

Pachyophthalmus signatus *Meig*.Pelopæus cementarius *Drury*. Bred by H. G. Hubbard, August 14, from a nest collected at Centerville, Fla.

Trypoxylon sp. Bred July 8, 1896, by E. A. Schwarz, from a nest found at Berkeley, W. Va.

Panzeria penitalis *Coq*.....Pyrausta penitalis *Grote*. Bred June 1, 1876, by Dr. Riley, at St. Louis, Mo., from a caterpillar collected the previous year. Also bred May 15, 1885, by Miss M. E. Murtfeldt, Kirkwood, Mo.

Panzeria radicum *Fabr*.....Hyphantria cunea *Drury*. Bred April 13, 1874, by O. Lugger, at St. Louis, Mo., from a cocoon found October 26, 1873. Also issued from a caterpillar collected in Washington, D. C.

Hyphantria sp. Issued March 26 and 30, 1896, from caterpillars collected August 18, 1895, on a persimmon tree at Riverview, Md., by T. Pergande.

Phorichæta sequax *Will*.....*Noctua fennica *Tausch*. (Cook, Notes on Injurious Insects, 1884.)

Noctuid. Bred in July, 1888, by A. Koebele, from a caterpillar collected at Summit, Cal.

Phorocera comstocki *Will*.....*Lophyrus sp. (Forbes, Psyche, June, 1893, p. 467.)

Megathymus yuccæ *Bd.-Lec*. Bred March 14, 1874, by O. Lugger, from a puparium received from South Carolina. Issued March 21 and 26, 1892, from a caterpillar received from J. H. Mellichamp, Bluffton, S. C.

*Pyrausta penitalis *Grote*. (Forbes, Psyche, June, 1893, p. 467.)

Phorocera doryphoræ *Riley*.....Doryphora 10-lineata *Say*. Issued July 30, 1897, from a larva collected by Frank Benton at Berwyn, Md.

Vanessa antiopa *Linn*. Bred by Dr. Riley, at St. Louis, Mo.

Phorocera leucaniæ *Coq*.....Leucania unipuncta *Haw*. Issued June 4, 1896, from a caterpillar received May 4 from J. C. Mackey, Ripley, Tenn.

Loxostege similalis *Guen*. Issued July 7 and 9, 1888, from caterpillars received from W. F. Avera, Camden, Ark.

Phorocera parva *Bigot*.....Tortrix citrana *Fern*. Bred by the writer May 13, 1887, from a caterpillar collected April 28 at Los Angeles, Cal.

Phorocera saundersii *Will*.....*Argynnis cybele *Fabr*. (Riley, in Scudder's Butterflies of New England, Vol. III, p. 1922.)

Phorocera tortricis *Coq*.....Tortricid. Bred by C. P. Gillette, from a caterpillar found on a cherry tree in Michigan.

Plectops melissopodis *Coq*.....Melissopus latiferreana *Wlshm*. Issued July 19, 1892. Also bred July 20, 1893, by Miss M. E. Murtfeldt, Kirkwood, Mo. Issued May 5, 21, 25, and 28, 1894, from caterpillars collected in April by T. Pergande in Washington, D. C.

Pseudochæta argentifrons *Coq* ..Bombycid. Bred by the writer May 23, 24, and 30, 1890, from a caterpillar found May 20 feeding on lichens on an apple tree at Santa Barbara, Cal.

Pseudochæta pyralidis *Coq* .....Pyralid. Issued March 24, 1880, from a caterpillar found in a nest of leaves on an oak tree.

Senotainia trilineata *v. d. W*.....*(?) Leucania unipuncta *Haw.* (Forbes, Psyche, June, 1893, p. 467.)

Sphecius speciosus *Drury.* Issued August 7, 1890, from a nest found August 5, by T. Pergande, in Washington, D. C.

Siphona plusiæ *Coq* .....Plusia californica *Speyer.* Bred by the writer July 2, 1892, at Los Angeles, Cal.; the tachinid larva issued June 18 from a caterpillar collected June 17.

Spallanzania hesperidarum *Will.*.....* Eudamus tityrus *Fabr.* (Harris, in Scudder's Butterflies of New England, Vol. III, p. 1917.)

Sturmia albifrons *Walk*.....Ecpantheria scribonia *Stoll.* Bred by H. G. Hubbard, at Centerville, Fla.

Leucarctia acræa *Drury.* Bred June 25 and July 2, 1881, by Dr. Riley, from a caterpillar received June 11 from A. P. Butler, Columbia, S. C. Issued March 20 and 26, 1883, from a cocoon received March 9 from Mrs. A. E. Bush, San Jose, Cal. Also bred by Mrs. W. Seliger, Hartford, Conn. Issued June 16, 1885, from a cocoon received from Murphy Brothers, Paris, Tex.

Sturmia distincta *Wied*.....Protoparce celeus *Hueb.* Bred June 1, 1880, by G. H. French, Carbondale, Ill.

Protoparce jamaicensis *Butl.* Bred September 7, 1889, by C. H. T. Townsend, Kingston, Jamaica.

Sphingid. Issued May 14, 1889, from a caterpillar found on an ash tree by G. H. Hathaway, Palestine, Tex. Also November 21, 1893, from a caterpillar received from the same source.

Sturmia harrisinæ *Coq*.....Harrisina americana *Harris.* Issued October 7, 1886.

Sturmia inquinata *v. d. W*.....Ceratomia amyntor *Hueb.* Issued May 28 and 31, 1881.

Ceratomia undulosa *Walk.* Bred March 11, 1875, by Dr. Riley, at St. Louis, Mo., from a caterpillar collected the previous season. Also issued July 27 and 28, 1888.

Deilephila lineata *Fabr.* Bred October 1, 1892, by H. A. Morgan, Baton Rouge, La.

Hemileuca maia *Drury.* Issued September 25.

Philampelus achemon *Drury.* 18 specimens were bred from one chrysalis October 18, 1881, by Miss M. E. Murtfeldt, Kirkwood, Mo.

Protoparce carolina *Linn.* Bred May 17, 1880, by G. H. French, Carbondale, Ill. Also issued December 28, 1891, from a chrysalis collected November 21, by Dr. Riley, in Colorado.

Protoparce celeus *Hueb.* Bred in April, 1871, by Dr. Riley, at St. Louis, Mo.

Protoparce cingulata *Fabr.* Issued January 26 and 27, 1882, from a chrysalis received December 17, 1881, from J. C. Neal, Archer, Fla.

Sturmia phyciodis *Coq*.....Phyciodes sp. Issued October 7, 1889, from a caterpillar collected September 15, by T. Pergande, at Piney Point, Md.

Sturmia schizuræ *Coq*.....Schizura ipomœæ *Doubl.* Bred in May, 1895, by C. V. Piper, Pullman, Wash.

Tachina mella *Walk*.....Acronycta populi *Riley.* Issued September 26 and December 7, 1874.

Arctia phyllira *Drury.* Issued April 7, 1882, from a caterpillar collected March 15, by A. Koebele, at Archer, Fla.

* Clisiocampa disstria *Hueb.* (Harvey, Psyche, May, 1891, p. 84.)

Clisiocampa sp. Issued July 10, 1888, from a caterpillar received from Evanston, Wyo. Also October 2, 1888, from one received June 25, from T. D. A. Cockerell, West Cliff, Colo. Bred by the writer from a caterpillar found on an oak tree near Los Angeles, Cal.

Clisiocampa thoracica *Stretch.* Bred in 1890 by A. Koebele, from a caterpillar found at Glen Ellen, Cal.

Leucarctia acræa *Drury.* Bred July 6, 7, and 8, by F. F. Crevecoeur, Onaga, Kans.

Orgyia leucostigma *S. & A.* Issued September 16, 1895, from a cocoon collected September 7, at Washington, D. C. Also issued in July, 1896, from caterpillars collected in the same locality.

* Porthetria dispar *Linn.* (Fernald, The Gypsy Moth, p. 387.)

Pyrrharctia isabella *S. & A.* Issued June 14. Bred June 10, 1892, by W. Brodie, Toronto, Canada.

Tachina robusta *Town*.....Agrotis ypsilon *Rott.* Issued April 12, 1873.

Clisiocampa sp. Bred by A. Koebele from caterpillars collected in Sonoma County, Cal.

Tachina rustica *Fall*.....* Tenthredinid. (Harrington, Trans. Amer. Ent. Soc., Vol. XIX, p. 285.)

Trichophora miscelli *Coq*.....Adisophanes miscellus *Grote.* Bred in 1886, by A. Koebele, at Los Angeles, Cal.

Trichopoda pennipes *Fabr*.....Anasa tristis *DeG.* Issued September 12 and 13, 1894, from an adult received from M. P. Barnard, Kennett Square, Pa.

Trichopoda plumipes *Fabr*.....Dissosteira venusta *Stål.* Bred by A. Koebele, August 30, 1887, from an adult collected at St. Helena, Cal.

Winthemia 4-pustulata *Fabr*....Alypia octomaculata *Hueb.* Issued July 28, 1897, from a caterpillar received July 13 from C. G. Griswold, Brooklyn, N. Y.

Attacus cecropia *Linn.* Bred by Dr. Riley at St. Louis, Mo.

Bombycid. Issued October 21, 1882, from a caterpillar found on a birch tree.

Datana ministra *Drury.*

* Deilephila lineata *Fabr.* (Riley, Can. Entomologist, Vol. XIX, p. 165.)

Feltia herilis *Grote.* Issued June 6, 1895, from a caterpillar received May 8 from Spencer Merrill, Mine la Motte, Mo.

Winthemia 4-pustulata *Fabr*....Halisidota tessellata *S. & A.* Issued August 14, 1896, from a caterpillar received August 1 from L. Collins, Brooklyn, N. Y.

* Hemaris diffinis *Boisd.* (Forbes, Psyche, June, 1893, p. 467.)

Laphygma frugiperda *S. & A.*

Leucania unipuncta *Haw.* Issued June 12, 13, 14, and 18, 1879, from caterpillars collected by Dr. Howard near Portsmouth, Va. Also, August 12, 1880, from a caterpillar received August 2 from R. A. Ayres, Stillville, Va. Also June 21, 22, and 23, 1894, from caterpillars received June 7, from E. P. Hatcher, Chester, Pa. And July 23, 1896, from a caterpillar collected at Agawam, Mass. Also bred in 1896, by M. V. Slingerland, Ithaca, N. Y.

Orgyia leucostigma *S. & A.* Issued in October, 1895, and April 14, 1896, from caterpillars collected at Washington, D. C.

Peridroma saucia *Hueb.* Issued June 10, 1872.

Protoparce celeus *Hueb.* Bred in April, 1871, by Dr. Riley, from a caterpillar collected the previous year at St. Louis, Mo.

Telea polyphemus *Cram.* Issued May 29, 1882, from a caterpillar collected September 5, 1881, by B. P. Mann, in Washington, D. C.

II.—Hosts and Their Parasites.

[The breeding records are omitted in this part of the list.]

Host insects.	*Parasites.*
HYMENOPTERA.	
Bombus fervidus *Fabr*	Brachycoma davidsoni *Coq.*
Bombus sp	Frontina frenchii *Will.*
Isodonta elegans *Smith*	Pachyophthalmus floridensis *Town.*
Lophyrus abbotii *Leach*	Admontia demylus *Walk.*
Lophyrus lecontei *Fitch*	Admontia demylus *Walk.*
Lophyrus sp	Euphorocera claripennis *Macq.*
	Exorista petiolata *Coq.*
	* Phorocera comstocki *Will.*
Pelopæus cementarius *Drury*	Pachyophthalmus floridensis *Town.*
	Pachyophthalmus signatus *Meig.*
Schizocera ebena *Nort*	Hypostena floridensis *Town.*
Sphecius speciosus *Drury*	Senotainia trilineata *v. d. W.*
Tenthredinid	Hypostena variabilis *Coq.*
	* Masicera tenthredinidarum *Town.*
	* Tachina rustica *Fall.*
Trypoxylon politum *Say*	* Pachyophthalmus floridensis *Town.*
Trypoxylon sp	Pachyophthalmus signatus *Meig.*
HEMIPTERA.	
Anasa tristis *DeG*	Trichopoda pennipes *Fabr.*

ORTHOPTERA.

Acridiidid	*Hilarella fulvicornis *Coq.*
	Trichopoda plumipes *Fabr.*
	Ocyptera carolinæ *Desv.*
Chortophaga viridifasciata *DeG.*	Acemyia dentata *Coq.*
Dissosteira carolina *Linn*	Frontina frenchii *Will.*
Dissosteira venusta *Stål*	Trichopoda plumipes *Fabr.*

COLEOPTERA.

Balaninus nasicus *Say*	Myiophasia ænea *Wied.*
Calosoma calidum *Fabr*	Biomyia georgiæ *Br. & Berg.*
Calosoma peregrinator *Guér*	Biomyia georgiæ *Br. & Berg.*
Chalcodermus sp	Myiophasia ænea *Wied.*
Chrysomela multipunctata *Say*	Euphorocera claripennis *Macq.*
Conotrachelus juglandis *Lec*	Myiophasia ænea *Wied.*
Coptocycla clavata *Fabr*	Hypostena barbata *Coq.*
Diabrotica 12-punctata *Oliv*	Celatoria diabroticæ *Shimer.*
Diabrotica soror *Lec*	Celatoria diabroticæ *Shimer.*
Diabrotica vittata *Fabr*	Celatoria diabroticæ *Shimer.*
Disonycha xanthomelæna *Dalm.*	Hypostena barbata *Coq.*
Doryphora 10-lineata *Say*	Phorocera doryphoræ *Riley.*
Epilachna borealis *Fabr*	Euphorocera claripennis *Macq.*
Lachnosterna arcuata *Smith*	Eutrixa masuria *Walk.*
	Microphthalma disjuncta *Wied.*
Lachnosterna inversa *Horn*	Cryptomeigenia theutis *Walk.*
Sphenophorus parvulus *Gyll*	*Myiophasia ænea *Wied.*
Sphenophorus robustus *Horn*	Myiophasia robusta *Coq.*

LEPIDOPTERA.

Acronycta dactylina *Grote*	Amobia distincta *Town.*
Acronycta hamamelis *Guen*	Euphorocera claripennis *Macq.*
	Exorista eudryæ *Town.*
	Exorista lobeliæ *Coq.*
Acronycta lobeliæ *Guen*	Exorista lobeliæ *Coq.*
Acronycta luteicoma *G. & R*	Exorista eudryæ *Town.*
Acronycta occidentalis *G. & R.*	Archytas aterrima *Desv.*
Acronycta ovata *Grote*	Archytas aterrima *Desv.*
Acronycta populi *Riley*	Tachina mella *Walk.*
Acronycta sp	Exorista eudryæ *Town.*
	Exorista lobeliæ *Coq.*
Adisophanes miscellus *Grote*	Trichophora miscelli *Coq.*
Agraulis vanillæ *Linn*	Euphorocera claripennis *Macq.*
Agrotis sp	Chætogædia crebra *r. d. W.*
	Phorichæta sequax *Will.*
Agrotis ypsilon *Rott*	Exorista eudryæ *Town.*
	Frontina archippivora *Will.*
	Linnæmyia comta *Fall.*
	Tachina robusta *Town.*
Aletia argillacea *Hueb*	Euphorocera claripennis *Macq.*
	Frontina aletiæ *Riley.*
Alypia octomaculata *Hueb*	Exorista eudryæ *Town.*
	Winthemia 4-pustulata *Fabr.*
Anisota senatoria *S. & A*	Euphorocera claripennis *Macq.*
	Frontina frenchii *Will.*

Anisota virginiensis *Drury*	Frontina frenchii *Will.*
Apatura celtis *Bd.-Lec.*	*Euphorocera claripennis *Macq.*
Apatura clyton *Ed.-Lec.*	Euphorocera claripennis *Macq.*
Arachnis picta *Pack*	Blepharipeza adusta *Loew.*
	Exorista cheloniæ *Rond.*
Arctia docta *Walk.*	Euphorocera claripennis *Macq.*
	Exorista cheloniæ *Rond.*
Arctia phyllira *Drury*	Tachina mella *Walk.*
Arctia sp.	Exorista affinis *Fall.*
Argynnis cybele *Fabr.*	*Phorocera saundersii *Will.*
Arzama obliquata *G. & R.*	Masicera myoidæa *Desr.*
Attacus cecropia *Linn*	Frontina frenchii *Will.*
	Winthemia 4-pustulata *Fabr.*
Attacus sp	Frontina frenchii *Will.*
Blastobasis nubilella *Zell.*	Hypostena floridensis *Town.*
Boarmia pampinaria *Guen*	Exorista boarmiæ *Coq.*
Bombycid	Pseudochæta argentifrons *Coq.*
	Winthemia 4-pustulata *Fabr.*
Carneades messoria *Harris*	Aphria ocypterata *Town.*
	Linnæmyia comta *Fall.*
Carneades sp	Chætogædia monticola *Bigot.*
Carpocapsa pomonella *Linn.*	Hypostena variabilis *Coq.*
Ceratomia amyntor *Hueb*	Sturmia inquinata *v. d. W.*
Ceratomia catalpæ *Boisd.*	Euphorocera claripennis *Macq.*
	Frontina frenchii *Will.*
Ceratomia undulosa *Walk.*	Exorista ceratomiæ *Coq.*
	Sturmia inquinata *v. d. W.*
Cerura sp.	Archytas aterrima *Desv.*
	Frontina aletiæ *Riley.*
Chrysophanus xanthoides *Boisd.*	*Exorista confinis *Fall.*
Citheronia regalis *Fabr*	Belvosia bifasciata *Fabr.*
	Frontina frenchii *Will.*
Clisiocampa americana *Harr.*	Frontina frenchii *Will.*
Clisiocampa californica *Stretch.*	*Archytas analis *Fabr.*
	Frontina frenchii *Will.*
Clisiocampa constricta *Stretch.*	Blepharipeza adusta *Loew.*
	Frontina archipivora *Will.*
	Frontina frenchii *Will.*
Clisiocampa disstria *Hueb.*	Euphorocera claripennis *Macq.*
	*Frontina frenchii *Will.*
	*Tachina mella *Walk.*
Clisiocampa pluvialis *Dyar.*	Frontina archippivora *Will.*
Clisiocampa sp.	Tachina mella *Walk.*
	Tachina robusta *Town.*
Clisiocampa thoracica *Stretch.*	Blepharipeza adusta *Loew.*
	Exorista futilis *O. S.*
	Frontina frenchii *Will.*
	Tachina mella *Walk.*
Crocota rubicundaria *Hueb.*	Euphorocera claripennis *Macq.*
Danais archippus *Fabr.*	Frontina archippivora *Will.*
Dasylopha anguina *S. & A.*	Frontina aletiæ *Riley.*
	Frontina frenchii *Will.*
Datana contracta *Walk.*	Euphorocera claripennis *Macq.*
Datana ministra *Drury*	Frontina frenchii *Will.*
	Winthemia 4-pustulata *Fabr.*
Datana sp.	Frontina frenchii *Will.*

Deilephila lineata *Fabr*	Sturmia inquinata *v. d. W.*
	* Winthemia 4-pustulata *Fabr.*
Dendrobinus howardi *Dyar*	Exorista confinis *Fall.*
Dryocampa rubicunda *Fabr*	* Belvosia bifasciata *Fabr.*
	Frontina frenchii *Will.*
Ecpantheria scribonia *Stoll*	Jurinia metallica *Desv.*
	Sturmia albifrons *Walk.*
Empretia stimulea *Clem*	Euphorocera claripennis *Macq.*
Eubolina? sp	Euphorocera claripennis *Macq.*
Eucaterva variaria *Grote*	* Hyphantrophaga hyphantriæ *Town.*
Euchætes egle *Drury*	* Frontina frenchii *Will.*
Euclea cippus *Cram*	Exorista blanda *O. S.*
Eudamus tityrus *Fabr*	* Spallanzania hesperidarum *Will.*
Eudryas unio *Hueb*	Exorista eudryæ *Town.*
Eufitchia ribearia *Fitch*	* Masicera eufitchiæ *Town.*
Feltia herilis *Grote*	Euphorocera claripennis *Macq.*
	Winthemia 4-pustulata *Fabr.*
Hadena apamiformis *Grote*	Exorista futilis *O. S.*
Hadena devastatrix *Brace*	Gonia capitata *DeG.*
Hadena lignicolor *Guen*	* Echinomyia algens *Wied.*
Halisidota argentata *Pack*	Macquartia pristis *Walk.*
Halisidota edwardsii *Pack*	Blepharipeza adusta *Loew.*
Halisidota maculata *Harr*	Frontina aletiæ *Riley.*
Halisidota tessellata *S. & A*	Euphorocera claripennis *Macq.*
	Frontina aletiæ *Riley.*
	Winthemia 4-pustulata *Fabr.*
Harrisina americana *Harr*	Euphorocera claripennis *Macq.*
	Sturmia harrisinæ *Coq.*
Heliothis armiger *Hueb*	Frontina armigera *Coq.*
	Frontina frenchii *Will.*
Hemaris diffinis *Boisd*	* Winthemia 4-pustulata *Fabr.*
Hemileuca artemis *Pack*	Euphorocera claripennis *Macq.*
Hemileuca electra *Wright*	Euphorocera claripennis *Macq.*
Hemileuca maia *Drury*	Sturmia inquinata *v. d. W.*
Hemileuca sp	Belvosia bifasciata *Fabr.*
Heterocampa marthesia *Cram*	Exorista eudryæ *Town.*
Hydrœcia nitela *Guen*	Masicera myoidæa *Desv.*
Hyperchiria io *Fabr*	Exorista eudryæ *Town.*
	Frontina frenchii *Will.*
Hyphantria cunea *Drury*	Hyphantrophaga hyphantriæ *Town.*
	* Masicera eufitchiæ *Town.*
	Panzeria radicum *Fabr.*
Hyphantria sp	Panzeria radicum *Fabr.*
Hyponomeuta multipunctella *Clem*	Exorista pyste *Walk.*
Hypsoropha hormos *Hueb*	Frontina frenchii *Will.*
Ichthyura inclusa *Hueb*	Frontina frenchii *Will.*
Isa inornata *G. & R*	Exorista isæ *Coq.*
Lagoa crispata *Pack*	Archytas aterrima *Desv.*
Lagoa opercularis *S. & A*	Exorista flavirostris *v. d. W.*
	Frontina aletiæ *Riley.*
Lagoa sp	Euphorocera claripennis *Macq.*
Laphygma flavimaculata *Harr*	Frontina archippivora *Will.*
Laphygma frugiperda *S. & A*	Gonia capitata *DeG.*
	Winthemia 4-pustulata *Fabr.*

Leucania unipuncta *Haw*	Belvosia unifasciata *Desv.*
	*(?)Cistogaster immaculata *Macq.*
	*(?)Myiophasia ænea *Wied.*
	*(?)Ocyptera carolinæ *Desv.*
	Phorocera leucaniæ *Coq.*
	*(?)Senotainia trilineata *v. d. W.*
	Winthemia 4-pustulata *Fabr.*
Leucarctia acræa *Drury*	*Blepharipeza adusta *Loew.*
	Sturmia albifrons *Walk.*
	Tachina mella *Walk.*
Limacodes sp	*Macquartia pristis *Walk.*
Loxostege similalis *Guen*	Exorista boarmiæ *Coq.*
	Phorocera parva *Bigot.*
Lycæna exilis *Boisd*	Exorista confinis *Fall.*
Lycæna pseudargiolus *Bd.-Lec.*	*Exorista confinis *Fall.*
Lycæna sp	Exorista confinis *Fall.*
Mamestra trifolii *Rott*	Euphorocera claripennis *Macq.*
Megathymus yuccæ *Bd.-Lec.*	Phorocera comstocki *Will.*
Melissopus latiferreana *Wlshm.*	Plectops melissopodis *Coq.*
Mineola indiginella *Zell*	Exorista pyste *Walk.*
Nisoniades brizo *Bd.-Lec*	*Exorista blanda *O. S.*
Noctua fennica *Tausch*	* Phorichæta sequax *Will.*
Noctuid	Phorichæta sequax *Will.*
Œdemasia concinna *S. & A.*	Euphorocera claripennis *Macq.*
Omphalocera cariosa *Led*	Exorista ceratomiæ *Coq.*
	Exorista flavirostris *v. d. W.*
Orgyia leucostigma *S. & A.*	Euphorocera claripennis *Macq.*
	Exorista griseomicans *v. d. W.*
	Exorista lobeliæ *Coq.*
	Frontina aletiæ *Riley.*
	Frontina frenchii *Will.*
	Tachina mella *Walk.*
	Winthemia 4-pustulata *Fabr.*
Papilio thoas *Linn*	Frontina irrequieta *Walk.*
Papilio turnus *Linn*	*Frontina frenchii *Will.*
Pempelia sp	Exorista ceratomiæ *Coq.*
Peridroma saucia *Hueb*	Chætogædia monticola *Bigot.*
	Gonia capitata *DeG.*
	Winthemia 4-pustulata *Fabr.*
Phasiana neptata *Guen*	Euphorocera claripennis *Macq.*
Philampelus achemon *Drury*	Sturmia inquinata *v. d. W.*
Philampelus vitis *Linn*	Frontina violenta *Walk.*
Phyciodes sp	Sturmia phyciodis *Coq.*
Pieris rapæ *Linn*	*Exorista vulgaris *Fall.*
Plusia californica *Speyer*	Siphona plusiæ *Coq.*
Plodia sp	Epigrimyia floridensis *Town.*
Porthetria dispar *Linn*	*Tachina mella *Walk.*
Protoparce carolina *Linn*	Sturmia inquinata *v. d. W.*
Protoparce celeus *Hueb*	Sturmia distincta *Wied.*
	Sturmia inquinata *v. d. W.*
	Winthemia 4-pustulata *Fabr.*
Protoparce cingulata *Fabr*	Sturmia inquinata *v. d. W.*
Protoparce jamaicensis *Butler*	Sturmia distincta *Wied.*
Pyralid	Exorista ceratomiæ *Coq.*
	Exorista pyste *Walk.*
	Frontina frenchii *Will.*

Pyralid	Leskiomima tenera *Wied.*
	Pseudochæta pyralidis *Coq.*
Pyrameis atalanta *Linn*	Exorista eudryæ *Town.*
	*Exorista futilis *O. S.*
Pyrameis cardui *Linn*	Chætogædia monticola *Bigot.*
	*Exorista blanda *O. S.*
	Frontina archippivora *Will.*
	*Frontina frenchii *Will.*
Pyrameis carye *Hueb*	Frontina archippivora *Will.*
Pyrausta penitalis *Grote*	*Exorista vulgaris *Fall.*
	Hypostena variabilis *Coq.*
	Panzeria penitalis *Coq.*
	*Phorocera comstocki *Will.*
Pyrrharctia isabella *S. & A*	Tachina mella *Walk.*
Retinia sp	Admontia retiniæ *Coq.*
Schizura ipomœæ *Doubl*	Sturmia schizuræ *Coq.*
Schizura unicornis *S. & A*	*Frontina frenchii *Will.*
Smerinthus cerisyi *Kirby*	Frontina frenchii *Will.*
Sphingid	Sturmia distincta *Wied.*
Taeniocampa rufula *Grote*	Chætogædia crebra *r. d. W.*
Telea polyphemus *Cram*	Frontina frenchii *Will.*
	Winthemia 4-pustulata *Fabr.*
Thecla autolycus *Edw*	*Exorista pyste *Walk.*
Thecla calanus *Hueb*	*Exorista confinis *Fall.*
Tortrix citrana *Fern*	Phorocera parva *Bigot.*
Tortricid	Exorista pyste *Walk.*
	Hypostena tortricis *Coq.*
	Phorocera tortricis *Coq.*
Vanessa antiopa *Linn*	*Euphorocera claripennis *Macq.*
	*Frontina violenta *Walk.*
	Phorocera doryphoræ *Riley.*
Vanessa milberti *Godt*	*Hyphantrophaga hyphantriæ *Town.*

CLASSIFICATION.

Probably no single family of Diptera has received greater consideration in Europe than the Tachinidæ, and yet, strange as this may seem, no other family at the present time is in greater disorder. Several authors accord them only subfamily rank, but it appears desirable to consider them as a distinct family, although their relationship to the Dexidæ and Sarcophagidæ is a very intimate one. They may be recognized by the bare, or at least never plumose, antennal arista. They are commonly divided into five subfamilies, and these have by one or two writers even been accorded family rank. The characters employed in separating them are as follows:

Abdomen destitute of stout macrochætæ:
- With only four abdominal segments ..... Gymnosominæ.
- With five or six abdominal segments ..... Phasinæ.

Abdomen bearing stout macrochætæ:
- With only four abdominal segments ..... Tachininæ.
- With five abdominal segments—
  - Abdomen not clavate ..... Phaninæ.
  - Abdomen clavate, narrow at the base ..... Ocypterinæ.

This classification looks very nice on paper, but when we undertake to apply it to the specimens themselves, then the difficulty arises. In the first place, in many species the macrochætæ are so reduced in size that it is no easy matter to decide as to whether they should be considered as macrochætæ or simply as bristly hairs. Then again, the males of several species have five visible abdominal segments, while their females have only four; and, conversely, the females of a few species have five and their males only four. This difference is due to the greater or less development of what, in those with only four abdominal segments, is the first segment of the genitalia, and as this varies in size in the different species, it is not always easy to decide as to whether to regard it as belonging to the genitalia or as forming a distinct abdominal segment. In at least one genus (Hemyda), the fourth abdominal segment is so reduced in size as to appear as a part of the genitalia, and thus there are apparently only three abdominal segments. These differences, therefore, are developmental rather than structural. If there were differences in habits between these subfamilies there would then be some reason for retaining these divisions, but the differences are so slight that they hardly enter into this consideration. Thus the Tachininæ are known to attack the Hymenoptera, Lepidoptera, Diptera, Coleoptera, and Orthoptera, but not the Hemiptera; the Phasinæ and Ocypterinæ attack the Coleoptera, Orthoptera, and Hemiptera; the Gymnosominæ attack the Hemiptera only, and the Phaninæ the Coleoptera. It will thus be seen that all of these subfamilies, with the exception of the Gymnosominæ, attack Coleoptera; that all except the Tachininæ and Phaninæ prey upon the Hemiptera; while the Tachininæ is the only one known to attack the Hymenoptera, Lepidoptera, and Diptera. In point of numbers the Tachininæ outnumber all of the other subfamilies put together by at least fifteen species to one, and to this fact alone is apparently due the greater diversity in regard to their hosts.

The most recent attempt at a classification of the Tachinidæ of the world is by Brauer and Bergenstamm, of Vienna, Austria. These authors, who are new workers in this field, had access to the types of most of the species described by Meigen, Wiedemann, Schiner, Rondani, Jaennicke, and several by Macquart, and their figures and redescriptions of many of the species can not but prove to be great aids to future students of this group. In the first part of their work[1] they threw together in one mass the five families: Œstridæ, Tachinidæ, Dexidæ, Sarcophagidæ, and Muscidæ, and out of this chaotic mass they erected *fifty-five* families, which were duly given family names; but this classification did not prove satisfactory to the authors, so in the third or last part of their systematic work they again threw all the families into one and divided it into *sixty* groups, which they call sections.

[1] Published in the Denkschriften der Mathematisch-Naturwissenchaftlichen Classe der Kaiserlichen Akademie der Wissenschaften for 1889.

So far as our own fauna is concerned, the species are too nearly related to one another, both structurally and also in regard to their habits, to permit of being separated into smaller groups with any degree of satisfaction.

TERMS USED IN DESCRIBING TACHINIDÆ.

Only a few terms employed in the present work will require an explanation, since in most cases the terms used in designating the various parts of the specimens are the same as those employed in the other departments of entomology. The term *macrochætæ* is used to designate the stout bristles which arise from a convex and usually polished base; they are regularly arranged in pairs, rows, or otherwise, and afford excellent specific and sometimes even generic characters. The *frontal bristles* are composed of two rows of such macrochætæ, which descend from the very top of the head to or below the insertion of the antennæ. The *ocellar bristles* are composed of a pair of macrochætæ placed among the ocelli, but they are absent in several species. The *orbital bristles* are two or more pairs of forwardly directed macrochætæ, situated between the frontal bristles and the eyes; they are usually present in female specimens, and sometimes also in the males. Beneath the antennæ is a cavity known as the *facial depression*, bounded on the sides by the *facial ridges;* at the lower ends of the ridges is a pair of macrochætæ called the *vibrissæ*. The *cheeks* are between the lower ends of the eyes and the opening of the mouth. The *antennæ*, as well as their two *aristæ*, are always composed of three joints, but sometimes the basal joint is extremely short.

On the thorax the two rows of macrochætæ in the middle of the dorsum are known as *acrostichal*, and the next two rows are the *dorsal*, although these four rows are sometimes called the *dorso-centrals;* these rows usually extend the entire length of the thorax, those in front of the transverse suture being called the *præsutural* and those behind it the *postsutural;* but when the latter term is used in the accompanying pages it applies to those in the outer rows only. The row on either side of these four is called the *intra-alar;* this row sometimes extends in front of the transverse suture by a single macrochæta, which has received the name of the *præsutural intra-alar* bristle. One European author, Mr. Girschner, proposes to separate the Tachinidæ into two groups according to whether this bristle is present or absent, but in some of our species it is present in some specimens but absent in others that belong to the same species; this character, therefore, is not of specific, much less of subfamily, importance. The *sternopleural* macrochætæ are situated on the upper part of the transverse, more or less triangular, piece located on the sides of the thorax between the front and middle coxæ; when only one is present, this is the posterior; when two, these are the anterior and the posterior; when three, two are in front and one behind; and when four, these are in a downwardly curving row.

The macrochætæ on the dorsum of the abdomen are called *discal*

when situated near the middle of the length of the segment, and *marginal* when located near its posterior margin.

The veins and cells of the wings are called by the same terms as in the other families of Diptera, except that the first posterior cell is commonly called the *apical*, and the portion of the fourth vein beyond the bend is sometimes termed the *apical crossvein*.

TABLE OF GENERA.

The only attempt at publishing a synoptic table, comprising all of the genera reported as occurring in North America, is that by Mr. C. H. T. Townsend, in the Proceedings of the Entomological Society of Washington[1] and in the Transactions of the American Entomological Society.[2] That in the former publication is a reprint of the table given by Dr. Schiner,[3] and that in the latter a reprint of the one by F. M. van der Wulp,[4] both modified so as to comprise only the North American genera. As the author did not have access to specimens of many of these genera, and as the characters he uses are in many cases not of specific, much less of generic, value, the result is not altogether satisfactory, and I have therefore constructed an entirely new table, which, however, includes only those genera from America north of Mexico of which I have examined representatives. A list of the remaining genera reported from this region is given at the end of the table.

In some cases doubt will arise as to which section a given genus should be referred, but in such cases, at least so far as they occur to the writer, the genus is placed in both sections:

1. Abdomen provided with true macrochætæ ..... 8.
   Abdomen destitute of macrochætæ, apical cell ending at or near the extreme wing tip ..... 2.
2. Upper side of abdomen very convex, abdomen subhemispherical, sides of face bare ..... 3.
   Upper side of abdomen flat, or the abdomen elongated and cylindrical ..... 4.
3. Antennæ not reaching lower third of face ..... (p. 42) *Cistogaster.*
   Antennæ reaching lowest fifth of face, or even lower ..... (p. 43) *Gymnosoma.*
4. Hind tibiæ outwardly not ciliate with scales ..... 5.
   Hind tibiæ ciliate with nearly erect scales, sides of face bare .. (p. 47) *Trichopoda.*
5. Sides of face bare ..... 6.
   Sides of face bristly, third and fourth veins almost equally converging toward their tips, which meet or almost meet each other ..... (p. 49) *Gymnophania.*
6. Proboscis at most slightly longer than the head, geniculate near the base only, antennæ at most reaching slightly below middle of face, apical cell closed, the petiole at least twice as long as the small crossvein 7
   Proboscis bristle like, almost as long as the body, geniculate near the base and also near the middle ..... (p. 49) *Eusiphona.*

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[1] Vol. II, pp. 92 to 99; April 2, 1891.

[2] Vol. XIX, pp. 134 to 141; June, 1892.

[3] Fauna Austriaca, Diptera, Vol. I, pp. LXX to LXXI; 1862.

[4] Biologia Centrali-Americana, Diptera, Vol. II, pp. 5 to 7, and 41 to 44; 1888 and 1890.

7. Sides of front hairy except a narrow space along each eye .....(p. 44) *Alophora.*
Sides of front bare except two or three rows of hairs along each side of the frontal vitta.....(p. 43) *Phorantha.*
8. Palpi present, well developed ..... 17.
Palpi absent or rudimentary, facial ridges never bristly on more than the lowest fourth, first vein bare ..... 9.
9. Eyes bare, or with indistinct, short, sparse hairs..... 10.
Eyes distinctly hairy, apical cell ending far before the wingtip, sides of face bare, upper edge of third antennal joint concave .....(p. 86) *Linnæmyia.*
10. Face on the sides bearing hairs or macrochætæ..... 11.
Face on the sides bare ..... 14.
11. Head at the vibrissæ as long as at base of antennæ, apical cell ending far before the extreme wingtip ..... 12.
Head at vibrissæ much shorter than at base of antennæ, sides of face bare except the row of three or four macrochætæ on each; apical cell ending close to the extreme wingtip .....(p. 126) *Atrophopalpus.*
12. With one or more stout macrochætæ on each side of face near lower end of the eye..... 13.
Without such macrochætæ, body very robust .....(p. 145) *Epalpus.*
13. Each side of the face bearing one macrochæta, body slender.(p. 139) *Trichophora.*
Each side bearing two or three macrochætæ, body robust....(p. 140) *Cuphocera.*
14. Proboscis at most only slightly longer than height of head..... 15.
Proboscis over twice as long as height of head, head at vibrissæ longer than at base of antennæ, apical cell ending close to the wingtip.....(p. 73) *Beskia.*
15. Horizontal diameter of head at the vibrissæ as long as at base of antennæ... 16
Horizontal diameter of head at vibrissæ much shorter than at base of antennæ, apical cell open, ending considerably before the extreme wingtip..(p. 66) *Ervia.*
16. Apical cell open, ending at the extreme wingtip .....(p. 67) *Apinops.*
Apical cell closed, its petiole longer than the small crossvein, ending far before the extreme wingtip.....(p. 86) *Ocyptera.*
17. First vein bare ..... 30.
First vein wholly or partly bristly, two or more pairs of frontal bristle below base of antennæ, vibrissæ nearly on a level with front edge of oral margin, antennæ reaching at least to lowest fifth of face..... 18.
18. Eyes bare or with indistinct short sparse hairs ..... 20.
Eyes distinctly hairy, head at the vibrissæ noticeably shorter than at base of antennæ, sides of face bare, apical cell open..... 19.
19. Facial ridges bristly on more than the lower half, third vein bearing from one to three bristles near its base.....(p. 65) *Hypochæta.*
Facial ridges never bristly on more than the lowest fourth, third vein bristly more than halfway from base to the small crossvein .....(p. 90) *Exoristoides.*
20. Diameter of head at vibrissæ as long as at base of antennæ ..... 26.
Diameter of head at vibrissæ noticeably shorter than at base of antennæ .... 21.
21. Tip of apical cell far before the extreme tip of wing..... 23.
Tip of apical cell at or close to the extreme tip of wing..... 22.
22. Penultimate joint of arista over three times as long as broad, facial ridges never bristly on more than the lowest fifth.....(p. 57) *Plectops.*
Penultimate joint of arista not, or only slightly, longer than broad, facial ridges bristly on at least the lower half.....(p. 59) *Chætophleps.*
23. Apical cell open ..... 24.
Apical cell closed and long petiolate.....(p. 126) *Metachæta.*
24. Sides of face destitute of rows of macrochætæ..... 25.
Sides of face each bearing a row of macrochætæ which descends almost to the lower end of the eye .....(p. 127) *Chætoplagia.*

25. Bend of fourth vein furnished with a long appendage, hind crossvein unusually oblique, lowest frontal bristles directed downward, proboscis thick, fleshy, labella large ..... (p. 78) *Plagia.*
Bend of fourth vein destitute of an appendage, hind crossvein nearly at right angles to the fourth vein ..... (p. 118) *Houghia.*
26. Fourth vein ending at or close to the extreme tip of wing ..... 27.
Fourth vein ending less than halfway from tip of second vein to the extreme tip of wing, proboscis slender, labella very small, lowest frontal bristles directed upward ..... (p. 78) *Siphoplagia.*
27. Third vein bristly at least almost to the small crossvein, proboscis at most only slightly longer than height of head ..... 28.
Third vein bristly on less than one-third of the distance from its base to the small crossvein, proboscis twice as long as height of head .. (p. 74) *Epigrimyia.*
28. Arista pubescent, the longest scarcely half as long as the greatest diameter of the arista ..... 29.
Arista bearing short hairs, the longest of which are slightly longer than its greatest diameter ..... (p. 67) *Leskiomima.*
29. Frontal vitta next the antennæ nearly four times as wide as either side of the front, third vein never bristly to the small crossvein, scutellum bearing only two pairs of long marginal macrochætæ ..... (p. 59) *Lasioneura.*
Frontal vitta next the antennæ at most twice as wide as either side of the front, third vein bristly almost to its tip, scutellum bearing three pairs of long marginal macrochætæ ..... (p. 58) *Actia.*
30. Face on the lower half of its sides bare ..... 79.
Face bearing macrochætæ or bristly hairs on at least a portion of the lower half of its sides ..... 31.
31. Tip of apical cell far before the extreme tip of wing ..... 40.
Tip of apical cell at or close to the extreme tip of wing, proboscis beyond the basal articulation at most only slightly longer than height of head ..... 32.
32. Abdomen subopaque, partly or wholly covered with grayish pollen ..... 33.
Abdomen largely or wholly shining and destitute of pollen .. (p. 50) *Myiophasia.*
33. Eyes bare, or with indistinct, short, sparse hairs ..... 34.
Eyes distinctly hairy, antennæ as long as the face, facial ridges never bristly on more than the lowest fourth ..... (p. 52) *Eulasiona.*
34. Frontal bristles to the number of from one to three pairs beneath base of antennæ; antennæ at least three-fourths as long as the face ..... 37.
Frontal bristles not descending beneath base of antennæ; antennæ less than two-thirds as long as face, cheeks two-thirds as broad as eye-height .. (p. 51) *Phyto.*
35, 36. (Omitted.)
37. First posterior cell open, or, if closed, short petiolate ..... 38.
First posterior cell closed and long petiolate, the petiole as long as the hind crossvein, third vein bristly almost to the small crossvein ... (p. 51) *Mauromyia.*
38. Third vein never bristly on more than one-fourth of the distance from base to small crossvein, sides of face destitute of macrochætæ ..... 39.
Third vein bristly at least three-fourths of distance from base to the small crossvein, sides of face bearing macrochætæ ..... (p. 52) *Ceratomyiella.*
39. Face in profile strongly convex, orbital bristles usually present in both sexes, front tarsi of female generally dilated ..... (p. 53) *Admontia.*
Face in profile concave, orbital bristles wanting in the male, front tarsi slender in both sexes ..... (p. 52) *Cryptomeigenia.*
40. Eyes bare, or with indistinct short sparse hairs ..... 49.
Eyes distinctly hairy ..... 41.
41. Sides of face bearing stout macrochætæ, at least near lower end of each eye .. 45.
Sides of face destitute of macrochætæ ..... 42.

42. Macrochætæ of second segment of abdomen covering more than its apical half. 44.
Macrochætæ of second segment, when present, confined to the apical fifth of this segment ..... 43.
43. Cheeks over one-third as broad as the eye-height ..... (p. 50) *Myiophasia.*
Cheeks less than one-sixth as broad as the eye-height ..... (p. 124) *Winthemia.*
44. Third joint of the antennæ almost straight on the front edge, the apex subtruncated ..... (p. 145) *Bombyliomyia.*
Third joint strongly convex on the front edge, the apex rounded. (p. 147) *Jurinella.*
45. Posterior end of hind crossvein nearer to the margin of the wing than to the small crossvein ..... 46.
Posterior end of hind crossvein at least twice as far from the margin of the wing as from the small crossvein, third joint of antennæ less than three times as long as the second ..... (p. 78) *Cyrtophlæba.*
46. Facial ridges never bristly on more than the lowest fifth ..... 47.
Facial ridges bristly on at least the lower half, third joint of antennæ about three times as long as the second, apical cell open ..... (p. 136) *Gœdiopsis.*
47. Last joint of antennæ at least five times as long as the second ..... 48.
Last joint scarcely longer than the second, penultimate joint of arista broader than long ..... (p. 125) *Muscopteryx.*
48. Penultimate joint of arista at least three times as long as broad, third joint of antennæ of male divided lengthwise into two parts, two pairs of orbital bristles in both sexes ..... (p. 137) *Dichocera.*
Penultimate joint at most slightly longer than broad, third joint of antennæ entire, male destitute of orbital bristles ..... (p. 126) *Paradidyma.*
49. Ocellar bristles present ..... 55.
Ocellar bristles wanting ..... 50.
50. Vibrissæ inserted near lower edge of face ..... 51.
Vibrissæ inserted near the middle of the face, cheeks broader than the eye height. (p. 138) *Microphthalma.*
51. Sides of face destitute of macrochætæ ..... 52.
Sides of the face each bearing two or three stout macrochætæ on the lower part. (p. 140) *Peleteria.*
52. Second segment of abdomen never bearing more than six marginal macrochætæ. (p. 141) *Archytas.*
Second segment of abdomen bearing at least twelve marginal macrochætæ .. 53.
53. Palpi gradually thickening from the base outwardly, proboscis shorter than height of head ..... 54.
Palpi thickened on the apical three-fourths, proboscis beyond the basal articulation at least one and one-third times as long as height of head .. (p. 146) *Dejeania.*
54. Outline of abdomen subquadrate, the apex deeply emarginate. (p. 146) *Paradejeania.*
Outline of abdomen conical, the apex not distinctly emarginate .. (p. 146) *Jurinia.*
55. The ocellar bristles directed obliquely forward ..... 57.
The ocellar bristles curving backward, very robust ..... 56.
56. Front opaque, the vitta deep brown or black ..... (p. 134) *Spallanzania.*
Front shining, largely semitranslucent yellow, the vitta light yellowish. (p. 132) *Gonia.*
57. Apical cell open, or, if closed, the petiole less than two-fifths as long as the hind crossvein ..... 58.
Apical cell closed, the petiole at least two-thirds as long as the hind crossvein. (p. 126) *Phorichæta.*
58. Last section of fifth vein less than half as long as the preceding section ..... 61.
Last section of fifth vein almost as long as the preceding section, hind crossvein nearly midway between the small and the bend of the fourth ..... 59.

59. Sides of face destitute of stout macrochætæ ..... 60.
Sides of face bearing one or more pairs of stout, downwardly curving macrochætæ below the lowest frontal bristles, arista thickened on the basal three-fourths. (p. 77) *Paraplagia.*

60. Arista thickened almost to the tip, third vein bristly nearly to the small crossvein ..... (p. 77) *Metaplagia.*
Arista never thickened to the middle, third vein bristly less than halfway to the small crossvein ..... (p. 76) *Heteropterina.*

61. Facial ridges bristly on less than the lowest fourth ..... 63.
Facial ridges bristly on at least the lower half ..... 62.

62. Penultimate joint of arista over twice as long as broad, bend of fourth vein destitute of a distinct appendage ..... (p. 137) *Chætogædia.*
Penultimate joint of arista shorter than broad, bend of fourth vein with a distinct appendage ..... (p. 127) *Araba.*

63. Antennæ reaching only slightly below middle of face ..... 64.
Antennæ reaching to or below the lowest fourth of the face ..... 72.

64. First posterior cell open ..... 65.
First posterior cell closed, the petiole as long as the small crossvein, cheeks two-thirds as broad as the eye height, facial ridges nearly parallel, sides of the face at narrowest part each as wide as the median depression. (p. 132) *Euthyprosopa.*

65. Abdomen subopaque, partly or wholly covered with pollen ..... 66.
Abdomen shining, destitute of pollen ..... (p. 50) *Myiophasia.*

66. Vibrissæ inserted at least the length of the second antennal joint above the oral margin ..... 67.
Vibrissæ inserted half the length of the second antennal joint or less above the oral margin ..... 70.

67. Frontal bristles not descending below base of antennæ ..... 68.
Frontal bristles, at least two pairs, situated below base of antennæ, vibrissæ near middle of face, cheeks broader than the eye height. (p. 138) *Microphthalma.*

68. Cheeks less than one-half as broad as the eye height, sides of face destitute of macrochætæ ..... 69.
Cheeks almost as broad as the eye height, sides of face bearing a row of macrochætæ ..... (p. 51) *Phyto.*

69. Small crossvein beyond the tip of the first vein ..... (p. 80) *Senotainia.*
Small crossvein far before the tip of the first vein ..... (p. 138) *Amobia.*

70. Third joint of antennæ at most but slightly longer than the second, sides of the face destitute of macrochætæ ..... 71.
Third joint more than twice as long as the second, antennæ two-thirds as long as the face, sides of face bearing a row of macrochætæ ... (p. 131) *Brachycoma.*

71. Second joint of arista over twice as long as broad ..... (p. 143) *Echinomyia.*
Second joint at most only slightly longer than broad ..... (p. 138) *Amobia.*

72. Face bearing macrochætæ at least near lower ends of the eyes ..... 73.
Face destitute of macrochætæ on its sides ..... 76.

73. Head at the vibrissæ as long as at base of antennæ, third joint of antennæ less than twice as long as the second ..... 74.
Head at the vibrissæ much shorter than at base of antennæ ..... 75.

74. Hind crossvein much nearer to the bend of the fourth vein than to the small crossvein ..... (p. 131) *Brachycoma.*
Hind crossvein at most only slightly nearer to the bend than to the small crossvein ..... (p. 130) *Tricogena.*

75. Facial ridges almost parallel, sides of face at narrowest part each nearly as wide as the median depression ..... (p. 128) *Opsidia.*
Facial ridges widely diverging below, sides of face each less than one half as wide as the median depression ..... (p. 127) *Metopia.*

76. Last joint of antennæ at least twice as long as the second..... 77.
Last joint at most only slightly longer than the second.....(p. 143) *Echinomyia.*

77. Second segment of abdomen bearing at most only two marginal macrochætæ, hind tibiæ not ciliate..... 78.
Second segment bearing at least four marginal macrochætæ, hind tibiæ outwardly densely ciliate with flattened setæ.....(p. 123) *Blepharipeza.*

78. Diameter of the head at the vibrissæ much shorter than at base of antennæ, third joint of the antennæ at least two and one-half times as long as the second. (p. 128) *Hilarella.*
Diameter of head at the vibrissæ as long as at base of antennæ, third joint of antennæ less than twice as long as the second.....(p. 131) *Brachycoma.*

79. Proboscis beyond the basal articulation at most one and one-fifth times as long as height of head..... 84.
Proboscis beyond the basal articulation at least one and one-third times as long as height of head, eyes bare..... 80.

80. Apical cell ending at or close to the extreme tip of wing..... 82.
Apical cell ending far before the extreme tip of wing, proboscis geniculate near the base only..... 81.

81. Ridges of face bristly on at least the lower three-fourths, apical cell closed, the petiole longer than the small crossvein.....(p. 79) *Chætoglossa.*
Ridges of face never bristly on more than the lowest fifth, apical cell open. (p. 85) *Aphria.*

82. With only one geniculation in the proboscis, situated near its base..... 83.
With two geniculations, one near the base and the other near the middle, facial ridges never bristly on more than the lowest fourth.....(p. 75) *Siphona.*

83. Facial ridges bristly on at least the lower half.....(p. 73) *Isoglossa.*
Facial ridges never bristly on more than the lowest fifth.....(p. 74) *Epigrimyia.*

84. Abdomen bright green or bluish green, facial ridges never bristly on more than the lowest fourth, eyes hairy .....(p. 89) *Gymnochæta.*
Abdomen black or more or less yellowish.
Apical cell ending far before the extreme tip of wing..... 85.
Apical cell ending at or close to the extreme tip of wing ..... 129.

85. Last section of fifth vein less than one-half as long as the preceding section.. 87.
Last section of fifth vein almost as long as the preceding section, bend of fourth vein with a long appendage, eyes bare or with indistinct, short, sparse hairs, ocellar bristles directed obliquely forward ..... 86.

86. Bristles of facial ridges confined to their lowest third.....(p. 76) *Heteropterina.*
Bristles ascending at least to upper third of the ridges..(p. 77) *Plagiprospherysa.*

87. Ocellar bristles when present directed obliquely forward..... 89.
Ocellar bristles curving backward, apical cell closed and petiolate..... 88.

88. Penultimate joint of arista over four times as long as broad, facial ridges bristly on more than the lower half.....(p. 79) *Distichona.*
Penultimate joint shorter than broad, facial ridges never bristly on more than the lowest fifth.....(p. 68) *Leucostoma.*

89. Eyes bare, or with indistinct, short, sparse hairs..... 99.
Eyes distinctly hairy..... 90.

90. Second segment of abdomen bearing at most only three pairs of macrochætæ in the middle of the dorsum..... 91.
Second segment thickly covered with macrochætæ on at least two-thirds of its length .....(p. 145) *Bombyliomyia.*

91. Facial ridges never bristly on more than the lower half..... 94.
Facial ridges bristly on at least their lower two-thirds ..... 92.

92. Front destitute of backwardly curving macrochætæ outside of the two frontal rows ..... 93.
Front in each sex bearing two or three pairs of backwardly curving macrochætæ outside of the regular frontal rows ..... (p. 116) *Pseudochæta.*
93. Bend of fourth vein bearing a long appendage or distinct fold. (p. 101) *Euphorocera.*
Bend of fourth vein destitute of an appendage or fold..... (p. 102) *Phorocera.*
94. Sides of face at narrowest part less than one-third as wide as the median depression..... 96.
Sides of face more than one-half as wide as the median depression..... 95.
95. Head at the vibrissæ much shorter than at base of antennæ, bend of fourth vein destitute of an appendage..... (p. 89) *Macromeigenia.*
Head at the vibrissæ as long as at base of antennæ, bend of fourth vein bearing an appendage..... (p. 89) *Metaphyto.*
96. Diameter of head at the vibrissæ much shorter than at base of antennæ, bend of fourth vein destitute of an appendage..... 97.
Diameter of head at the vibrissæ as long as at base of antennæ..... 98.
97. Frontal bristles descending at least to last third of the second antennal joint. (p. 91) *Exorista.*
Frontal bristle not descending below the base of the second antennal joint. (p. 64) *Macquartia.*
98. Base of fourth vein bearing a long appendage; second and third segments of the abdomen destitute of discal macrochætæ..... (p. 87) *Nemoræa.*
Bend of fourth vein at most with an extremely short appendage, second and third segments of abdomen bearing discal macrochætæ..... (p. 88) *Panzeria.*
99. Antennæ reaching at least the lowest fourth of the face..... 110.
Antennæ not reaching below the lowest third of the face..... 100.
100. Vibrissæ at less than one-half the length of the second antennal joint above the level of the front edge of the oral margin..... 108.
Vibrissæ inserted at least the length of the second antennal joint above the level of the front edge of the oral margin..... 101.
101. Lowest frontal bristles below middle of the second antennal joint..... 105.
Lowest frontals not below base of the second antennal joint..... 102.
102. Cheeks less than one-third as broad as the eye height, arista never thickened on more than the basal third..... 103.
Cheeks almost as broad as the eye height, arista thickened nearly to the tip, abdomen shining, not pollinose..... (p. 85) *Melanophrys.*
103. Frontal bristles in two rows..... 104.
Frontal bristles in four rows..... (p. 79) *Pachyophthalmus.*
104. Diameter of head at the vibrissæ as long as at base of antennæ, lower front angle of the third antennal joint not prolonged in the form of a tooth. (p. 80) *Senotainia.*
Diameter of head at the vibrissæ much shorter than at base of antennæ, lower front angle of the third antennal joint prolonged into a sharp tooth. (p. 115) *Acemyia.*
105. Ocellar bristles present, directed obliquely forward..... 106.
Ocellar bristles wanting..... (p. 84) *Belvosia.*
106. Hind tibiæ not distinctly ciliate outwardly..... 107.
Hind tibiæ outwardly ciliate with bristles, apical cell open..... (p. 83) *Atacta.*
107. Apical cell open..... (p. 81) *Biomyia.*
Apical cell closed and short petiolate..... (p. 81) *Pseudotractocera.*
108. Pair of lowest frontal bristles not below base of second antennal joint..... 109.
Pair of lowest frontals below middle of second antennal joint, frontal bristles in two rows..... (p. 83) *Atacta.*
109. Frontal bristles in four rows..... (p. 79) *Pachyophthalmus.*
Frontals in two rows..... (p. 122) *Paraphyto.*

110. Vibrissæ at most only one-half the length of the second antennal joint above the level of the front edge of the oral margin ..... 113.
Vibrissæ at least the length of the second antennal joint above the level of the oral margin, frontal bristles descending below middle of the second antennal joint ..... 111.

111. The ocellar bristles present, directed obliquely forward, facial ridges never bristly on more than the lowest fourth ..... 112.
The ocellar bristles wanting, facial ridges bristly on at least the lowest third. (p. 84) *Belvosia.*

112. Outer side of hind tibiæ distinctly ciliate with bristles ..... (p. 83) *Atacta.*
Outer side of hind tibiæ not ciliate ..... (p. 81) *Biomyia.*

113. Lowest frontal bristles below the base, and usually beneath the middle, of second antennal joint ..... 116.
Lowest frontals not below base of second antennal joint ..... 114.

114. Facial depression destitute of a median carina ..... 115.
Facial depression with a high median carina, apical cell closed, the petiole twice as long as the small crossvein ..... (p. 120) *Euthera.*

115. Cheeks about as broad as the eye-height ..... (p. 85) *Melanophrys.*
Cheeks less than one-half as broad as the eye height.
Lower front corner of the third antennal joint produced in the form of a sharp tooth ..... (p. 115) *Acemyia.*
Lower front corner of the third antennal joint not produced in the form of a tooth.
Head, viewed from in front, broader than high, arista bare, or nearly so ..... (p. 128) *Hilarella.*
Head higher than broad, arista short haired ..... (p. 117) *Vanderwulpia.*

116. Second segment of abdomen never bearing more than four marginal macrochætæ ..... 117.
Second segment bearing at least six marginal macrochætæ, hind tibiæ outwardly ciliate with bristles ..... (p. 123) *Blepharipeza.*

117. Hind tibiæ outwardly ciliate with bristles ..... 118.
Hind tibiæ not ciliate ..... 123.

118. Bristles of cheeks covering at least the lower three-fourths ..... 119.
Bristles of cheeks covering less than the lower half ..... (p. 91) *Hyphantrophaga.*

119. Facial ridges bristly at least almost to the middle ..... 121.
Facial ridges bristly on less than the lowest fourth ..... 120.

120. Head at the vibrissæ as long as at the base of antennæ, proboscis slender, rigid, the labella horny and not thicker than the proboscis ..... (p. 83) *Siphosturmia.*
Head at the vibrissæ much shorter than at base of antennæ, proboscis robust, fleshy, the labella soft ..... (p. 108) *Sturmia.*

121. With at least three backwardly curving bristles in each of the frontal rows, abdomen largely or wholly opaque pollinose ..... 122.
With only two backwardly curving bristles in each of the frontal rows, abdomen shining, destitute of pollen ..... (p. 123) *Parachæta.*

122. Front bearing two or three pairs of backwardly curving macrochætæ outside of the frontal rows, the anterior pair midway between the lowest ocellus and base of antennæ ..... (p. 116) *Pseudochæta.*
Front destitute of such macrochætæ ..... (p. 105) *Frontina.*

123. Ocellar bristles present, directed obliquely forward ..... 124.
Ocellar bristles wanting ..... (p. 84) *Belvosia.*

124. Bend of fourth vein destitute of an appendage ..... 126.
Bend of fourth vein bearing an appendage or distinct fold ..... 125.

125. Arista distinctly pubescent, facial ridges bristly on the lower five-sixth. (p. 117) *Prosphersya.*
Arista bare, facial ridges at most bristly on the lower three-fifths. (p. 118) *Tachina.*

126. Diameter of head at the vibrissæ as long as at base of antennæ ..... 127.
Diameter of head at the vibrissæ much shorter than at base of antennæ ..... 128.

127. Ridges of face bristly on at least the lower two-thirds.....(p. 120) *Tachinopsis.*
Ridges bristly on less than the lowest third.....(p. 120) *Demoticus.*
128. Lower front corner of the third antennal joint produced in the form of a sharp tooth.....(p. 115) *Acemyia.*
Lower front corner of the third antennal joint not produced in a tooth.
Vibrissæ on a level with the front edge of the oral margin.(p. 113) *Masicera.*
Vibrissæ far above the level of front edge of oral margin..(p. 81) *Biomyia.*
129. Eyes bare or with indistinct short, sparse hairs..... 133.
Eyes distinctly hairy, antennæ reaching at least to lowest fourth of the face..... 130.
130. Frontal bristles not descending below base of second antennal joint; abdomen largely or wholly opaque gray pollinose..... 131.
Frontal bristles descending below middle of second antennal joint..... 132.
131. Cheeks nearly as broad as the eye height.....(p. 64) *Hyalurgus.*
Cheeks less than one-third as broad as the eye height.....(p. 64) *Macquartia.*
132. Body shining, destitute of pollen.....(p. 64) *Polidea.*
Body partly or wholly opaque pollinose.....(p. 63) *Didyma.*
133. Frontal vitta opaque, abdomen of four segments besides the very short basal one..... 134.
Frontal vitta shining black, abdomen of only three segments besides the very short basal one.....(p. 73) *Hemyda.*
134. Apical cell open, or with a petiole less than one-half as long as the hind crossvein..... 137.
Apical cell closed, the petiole almost as long as the hind crossvein..... 135.
135. Abdomen subcylindrical, nearly twice as long as wide, the second and third segments destitute of discal macrochætæ..... 136.
Abdomen subhemispherical, only slightly longer than broad, the second and third segments bearing discal macrochætæ.....(p. 70) *Hyalomyodes.*
136. The ocellar bristles curving backward, small crossvein before the tip of the first vein.....(p. 68) *Leucostoma.*
The ocellar bristles directed obliquely forward, small crossvein far beyond the tip of the first vein.....(p. 69) *Sciasma.*
137. Palpi subcylindrical, less than one-half as wide as the proboscis..... 138.
Palpi flattened and unusually dilated, wider than the proboscis, penultimate joint of arista almost one-half as long as the last one.....(p. 57) *Lispidea.*
138. Penultimate joint of arista over twice as long as broad..... 139.
Penultimate joint of arista at most only slightly longer than broad..... 142.
139. Third vein at most bearing four bristles near its base..... 140.
Third vein bristly almost to the small crossvein.....(p. 57) *Thryptocera.*
140. Arista slender on apical half of the last joint, third antennal joint entire in both sexes..... 141.
Arista thickened to the apex, third antennal joint in the male divided lengthwise into two parts.....(p. 55) *Schizotachina.*
141. Hind crossvein nearer to bend of fourth vein than to the small.(p. 55) *Medina.*
Hind crossvein nearer to the small than to bend of fourth vein.(p. 55) *Clausicella.*
142. Sides of face at narrowest part at most one-third as wide as the median depression, fourth vein entire..... 143.
Sides of face one-half as wide as the median depression, fourth vein obliterated beyond the bend.....(p. 66) *Racodineura.*
143. Head at the vibrissæ noticeably shorter than at base of antennæ..... 144.
Head at the vibrissæ as long as at base of antennæ..... 149.
144. Horizontal diameter of the occiput above the neck less than one-half as long as that of the eye..... 145.
Horizontal diameter of occiput above the neck as long as that of the eye, antennæ reaching at least to lowest fifth of the face, vibrissæ on a level with front edge of the oral margin.....(p. 65) *Pelatachina.*

145. With one or more pairs of frontal bristles below base of the second antennal joint ..... 147.
Without any frontals below base of second antennal joint..... 146.
146. Occiput at most only slightly convex, body short and robust. (p. 70) *Œstrophasia.*
Occiput strongly convex, body elongate and slender.....(p. 72) *Eutrixa.*
147. Front of male destitute of orbital bristles, venter of abdomen of female destitute of short spines, third vein bearing at least two bristles near the base.... 148.
Front in both sexes bearing orbital bristles, venter of female bearing many short black spines on the second segment, third vein usually with a single bristle near the base .....(p. 59) *Celatoria.*
148. Antennæ not reaching below the lowest fourth of the face.....(p. 81) *Biomyia.*
Antennæ almost or quite reaching the oral margin.....(p. 60) *Hypostena.*
149. Arista bare, or very short pubescent ..... 150.
Arista bearing hairs which are as long as its greatest diameter, antennæ reaching lowest fifth of the face .....(p. 66) *Leskia.*
150. Body short and robust ..... 151.
Body elongate and slender, antennæ not reaching below the lowest third of the face, apical cell closed and short petiolate.....(p. 72) *Xanthomelana.*
151. Tip of antennæ not below lowest third of the face, frontal bristles usually not descending below base of the second antennal joint ..... 152.
Tip of antennæ at or below lowest fifth of face, frontals usually descending below base of the second antennal joint..... 153.
152. Head over twice as high as long, occiput at most only slightly convex. (p. 70) *Œstrophasia.*
Head about one and one-third times as high as long, occiput usually strongly convex .....(p. 71) *Clytiomyia.*
153. Third vein bearing only two or three bristles near the base, head unusually short.....(p. 70) *Œstrophasia.*
Third vein bristly almost to the small crossvein, head not unusually short. (p. 75) *Siphona.*

UNRECOGNIZED GENERA.

The following genera, which have been reported from America north of Mexico, together with the species referred to them, have not been recognized by the writer, or else the species belong to other genera:

Baumhaueria analis van der Wulp, belongs to Chætogædia.

Besseria (*Wahlbergia*) *brevipennis* Loew. Nebraska.

Chrysosoma n. sp. Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 407; 1891. Georgia.

Clista americana Townsend is a synonym of *Myiophasia œnea* Wied.

Clistomorpha hyalomoides Townsend, Canadian Entomologist, Vol. XXIV, pp. 79 to 81; 1892. New York.

Cryptopalpus flaviceps Bigot, Rocky Mountains, and *melanopygatus* Bigot, Washington, Bulletin Soc. Ent. France, p. 141; 1887.

Daochæta harveyi Townsend, Trans. Amer. Ent. Soc., Vol. XIX, pp. 97 and 98; 1892. Maine.

Eliozeta americana Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 388; 1891. Georgia.

Euceromyia robertsonii Townsend, Trans. Amer. Ent. Soc., Vol. XIX, pp. 115 to 116; 1892. Southern Illinois.

Eucnephalia gonoides Townsend, Canadian Entomologist, Vol. XXIV, pp. 166, 167; 1892. New Mexico.

Eumyothyria illinoiensis Townsend, Trans. Amer. Ent. Soc., Vol. XIX, pp. 121, 122; 1892. Carlinville, Ill.

Euscopolia dakotensis Townsend, l. c., pp. 123, 124. South Dakota.
Evibrissa americana Bigot, Ann. Soc. Ent. France, p. 256; 1888. Washington.
Ginglymia acrirostris Townsend, Trans. Amer. Ent. Soc., Vol. XIX, pp. 118, 119; 1892. Constantine, Mich.
Goniochæta plagioides Townsend, l. c., Vol. XVIII, pp. 351, 352; 1891. Las Cruces, N. Mex.
Hemithrixion æstriforme Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 357; 1891. Colorado.
Hesperomyia erythrocera Brauer and Bergenstamm, l. c., IV, p. 114; 1889. Texas.
Himantostoma sugens Loew. Illinois.
Hypertrophocera parvipes Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, pp. 360, 361; 1891. Las Cruces, N. Mex.
Illigeria ælops Walker, belongs to Beskia; *I. corythus* Walker, is *Xanthomelana atripennis* Say; and *I. helymus* Walker, belongs to Metachæta.
Loewia nigrifrons, ruficornis, and *globosa* Townsend, appear to be synonyms of *Myiophasia ænea* Wied.
Lophosia setigera Thomson, belongs to Clausicella.
Myothyria vanderwulpia Townsend, belongs to Hypostena.
Neotractocera anomala Townsend, Trans. Am. Ent. Soc., Vol. XIX, pp. 105, 106; 1892. Las Cruces, N. Mex.
Parahypochæta heteroneura Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 337; 1891. North America.
Peteina stylata Brauer and Bergenstamm, l. c., pp. 386, 387. Greenland.
Phasia atripennis Say, belongs to Xanthomelana.
Podotachina americana Brauer and Bergenstamm, is *Tachina mella* Walker, and *P. ribrissata* of the same authors is *Euphorocera claripennis* Macquart.
Rhinophora valida and *mexicana* Townsend, Canadian Entomologist, Vol. XXIV, pp. 167, 168; 1892. Las Cruces, N. Mex.
Sarcoclista dakotensis Townsend, Trans. Am. Ent. Soc., Vol. XIX, pp. 122, 123; 1892. South Dakota.
Sterenia pictipes Bigot, is *Xanthomelana arcuata* Say.
Trixa gillettii Townsend, belongs to Paraphyto.
Tryphera americana and *polidoides* Townsend, are synonyms of *Polidea areos* Walker.
Xysta didyma Loew. Illinois.

SYSTEMATIC ARRANGEMENT OF THE GENERA.

A linear arrangement of the genera of the Tachinidæ so as to indicate their natural relationship is quite impossible, owing to the fact that in several cases each of three genera is more closely related to a fourth than to any other genus, and in a linear arrangement it is, of course, impossible to place each next to the one to which it is nearest related. The following arrangement shows the relationship of the genera given in the preceding table perhaps as nearly as can be done in a linear manner. By this arrangement, those without strong macrochætæ on the abdomen are placed at the opposite end of the series to those having these macrochætæ the most strongly developed:

Apical cell ending at or close to the extreme wingtip.
  Abdomen destitute of macrochætæ.
    Sides of the face bare.
      Proboscis shorter or only slightly longer than the head.
        Hind tibiæ not ciliate: *Cistogaster, Gymnosoma, Phorantha, Alophora.*
        Hind tibiæ outwardly ciliate: *Trichopoda.*
      Proboscis longer than the head and thorax united: *Eusiphona.*
    Sides of face with bristly hairs: *Gymnophania.*

Apical cell ending at or close to the extreme wingtip—Continued.
Abdomen bearing macrochætæ.
Sides of face with hairs or macrochætæ on the lower half: *Myiophasia, Phyto, Mauromyia, Cryptomeigenia, Ceratomyiella, Eulasiona, Admontia.*
Sides of face, on at least the lower half, bare.
Proboscis shorter or only slightly longer than height of head.
Frontal vitta opaque.
Vibrissæ on a level with the front edge of the oral margin.
Penultimate joint of arista at least twice as long as broad: *Medina, Schizotachina, Clausicella, Plectops, Lispidea, Thryptocera.*
Penultimate joint of arista shorter or only slightly longer than broad: *Actia, Lasioneura, Chætophleps, Celatoria, Hypostena, Didyma, Macquartia, Hyalurgus, Polidea, Hypochæta, Pelatachina, Racodineura, Ervia, Leskia, Leskiomima, Apinops.*
Vibrissæ distinctly above the front edge of the oral margin: *Leucostoma, Sciasma, Hyalomyodes, Œstrophasia, Clytiomyia, Eutrixa, Xanthomelana.*
Frontal vitta highly polished: *Hemyda.*
Proboscis at least one-third longer than height of head: *Beskia, Isoglossa, Epigrimyia, Siphona.*
Apical cell ending some distance in front of the extreme wingtip.
Last section of the fifth vein more than one-half as long as the preceding section: *Heteropterina, Plagiprospherysa, Metaplagia, Paraplagia, Cyrtophlæba, Plagia, Siphoplagia.*
Last section of the fifth vein less than one-third as long as the preceding section.
Sides of face on the lower half bare.
Vibrissæ distinctly above the front edge of the oral margin.
Eyes bare.
Penultimate joint of arista more than twice as long as broad: *Distichona, Chætoglossa.*
Penultimate joint of arista shorter or only slightly longer than broad: *Pachyophthalmus, Scnotainia, Pseudotractocera, Biomyia, Atacta, Siphosturmia, Belvosia, Melanophrys, Aphria, Ocyptera.*
Eyes distinctly hairy: *Linnæmyia, Nemoræa, Panzeria, Macromeigenia.*
Vibrissæ on a level with the front edge of the oral margin.
Eyes distinctly hairy: *Gymnochæta, Metaphyto, Exoristoides, Hyphantrophaga, Exorista, Euphorocera, Phorocera.*
Eyes bare: *Frontina, Sturmia, Masicera, Acemyia, Pseudochæta, Prospherysa, Vanderwulpia, Euthera, Houghia, Tachina, Tachinopsis, Demoticus, Paraphyto, Parachæta, Blepharipeza.*
Sides of face with hairs or macrochætæ on the lower half.
Vibrissæ on a level with the anterior edge of the oral margin: *Winthemia, Muscopteryx, Paradidyma, Atrophopalpus, Metachæta, Phorichæta, Chætoplagia, Metopia, Araba, Opsidia, Hilarella, Tricogena, Brachycoma, Euthyprosopa.*
Vibrissæ distinctly above the front edge of the oral margin.
Head at the vibrissæ much shorter than at base of antennæ: *Gonia, Spallanzania, Gædiopsis, Chætogædia, Dichocera, Microphthalma.*
Head at the vibrissæ longer than at base of antennæ: *Amobia, Trichophora, Cuphocera, Peleteria, Archytas, Echinomyia, Epalpus, Bombyliomyia, Dejeania, Paradejeania, Jurinea, Jurinella.*

The arrangement of the genera is that given above. In the case of synonyms, the oldest name has been adopted, since this method is the only one whereby a uniform system of nomenclature can be obtained. On the other hand, if we follow the law of favoritism we can never hope to have a uniform series of names, since the German student will adopt the name proposed by a German, the Frenchman one proposed by his own countryman, and so on. All of the synonymy given in these pages has been verified by the writer. By a few authors the names of certain genera have been rejected, owing to the fact that the author described under each of them species that properly belong to two or more distinct genera, but this does not at all invalidate the genus, since the name may be retained for one or more of the species and new generic terms applied to the others. Again, certain genera have been rejected on the score that they have been insufficiently characterized, but if one of the species that the author placed in a given genus can be identified with reasonable certainty, the generic characters can readily be ascertained from an examination of the specimens themselves.

Genera founded on characters peculiar to one sex only have not been adopted. The writer is of the opinion that in case the females of any two given species are structurally identical, these two species should not be separated into different genera, no matter to what extent the males of these two species may differ from each other. Any classification that will not enable us to refer a single specimen of either sex to its correct genus must necessarily come short of the very object for which it was designed.

The following pages contain references to all the species of Tachinidæ hitherto reported as occurring in this country north of Mexico and belonging to genera of which the writer has examined representatives. Only the species studied by the writer are tabulated; the others are listed at the end of the tables. Genera of which the writer has seen no representatives, together with the species from this region referred to them, have already been listed on previous pages. The localities given are those in which the specimens studied were captured; the published records have not been added, since it was intended to make the present work as nearly original as possible. The color of the halteres has been purposely omitted as of no specific importance.

Types of all the new species have been deposited in the United States National Museum.

Genus CISTOGASTER Latr.

Cistogaster Latreille, in Cuvier's Regne animal, Vol. V; 1829.
Pallasia Desvoidy, Essai sur les Myodaires, p. 239; 1830.
Gymnoclytia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, VI, p. 157; 1893.

The synonymy of Pallasia and Cistogaster was first pointed out by Macquart, and has been confirmed by Rondani, Schiner, Brauer and Bergenstamm, and others. Our single species is very different in the

opposite sexes; in the female the abdomen is black, while in the male it is largely or wholly yellow; in the female the thorax is gray pollinose, marked with two black vittæ; in the male it is yellowish pollinose, marked with four black vittæ; length, 5 to 7 mm. Grimsby, Canada; Maine; Franconia and White Mountains, New Hampshire; District of Columbia; North Carolina: Tifton, Ga.; Texas, Colorado, and California. (Diptères Exotiques, Vol. II, Part III, p. 233(76); 1842. *Gymnosoma occidua* Walker, List Dipt. Insects, Part IV, p. 692; 1849. *Cistogaster divisa* Loew, Diptera Amer. Sept. Indig., Centuria IV, No. 88; 1863. *Gymnoclytia divisa* Brauer and Bergenstamm *in litt.*) . . *immaculata* Macq.

Genus GYMNOSOMA Meig.

Gymnosoma Meigen, in Illiger's Magazin für Insektenkunde, Vol. II, p. 278; 1803.

In our single species the abdomen is yellow and marked with a black dorsal vitta or row of spots; dorsum of thorax of male in front of the suture yellowish pollinose and marked with four black vittæ, but in the female the dorsum is destitute of pollen except the humeri and narrow lateral margins; length, 5 to 8 mm. Grimsby, Canada; White Mountains and Franconia, N. H.; Maryland; District of Columbia; Virginia; Michigan; Agricultural College, Miss.; New Orleans, La.; Missouri; Kansas; Green River City, Wyo.; Colorado, Idaho, and California. (Essai sur les Myodaires, p. 237; 1830. *Gymnosoma par* Walker, List of Dipterous Insects, Part IV, p. 692; 1849. *Gymnosoma filiola* Loew, Dipt. Amer. Sept. Indigena, Centuria X, No. 66; 1872. *Gymnosoma* sp., Brauer and Bergenstamm *in litt.*) . . . . *fuliginosa* Desv.

Genus PHORANTHA Rond.

Phorantha Rondani, Dipterologiæ Italicæ Prodromus, Vol. V, p. 21; 1862.

Our species are black, the palpi and apex of proboscis sometimes yellow; only one postsutural and one sternopleural macrochæta; wings not marked with brown beyond the base of the discal cell, costa nearly straight:

1. Thorax subshining, almost destitute of pollen, not marked with distinct black vittæ; last section of the third vein nearly one half as long as the preceding section . . . . . 2.

   Thorax opaque, densely gray pollinose, marked with four shining black vittæ; frontal vitta of female at the narrowest point slightly wider than the distance between the posterior ocelli, last section of the third vein one-fourth as long as the preceding section, calypteres white; length 7 mm. Los Angeles County, Cal. (Tijdsch. voor Entomologie, Vol. XXXV, p. 185; 1892: *Hyalomyia.*) . . . . . *nigrens* v. d. W.

2. Calypteres whitish, second and third segments of abdomen thinly whitish pollinose, frontal vitta of female at the narrowest point less than one-third as wide as the distance between the posterior ocelli; length, 2.5 to 5 mm. Fort McLeod, British America; Maryland; southern Illinois; Georgia; Nueces, Tex.; South Dakota;

Canon City, Colo.; Las Cruces, N. Mex.; Washington; Los Angeles and San Diego counties, Cal.; and Allende, Mexico. (Insecta Saundersiana, Vol. I, p. 260; 1856: *Hyalomyia. Alophora luctuosa* Bigot, Annales Soc. Entomol. France, p. 255; 1888. *Hyalomyia punctigera* Townsend, Proc. Ent. Soc. Washington, Vol. II, p. 135; April 2, 1891. *Hyalomyia aldrichii* Townsend, l. c., p. 136; from a cotype specimen. *Hyalomyia robertsonii* Townsend, l. c. *Hyalomyia purpurascens* Townsend, l. c., p. 137; from a cotype specimen. *Hyalomyia celer* Townsend, Trans. Amer. Ent. Soc., Vol. XXII, p. 65; March, 1895. *Hyalomyia violascens* Townsend, Annals Mag. Nat. Hist., Vol. XX, p. 32; July, 1897. *Phorantha* sp., Brauer and Bergenstamm *in litt.*) ..... *occidentis* Walk.

Calypteres brown, first three segments of abdomen not distinctly pollinose except along the sides, the fourth segment lightly whitish pollinose and dotted with black, frontal vitta of male obliterated on its upper part, wings with a strong whitish tinge; length, 3.5 to 4 mm. District of Columbia; Potomac Creek, Virginia; Lexington, Ky.; and northern Illinois. Nine males, one taken by the writer in July, another captured by Mr. C. W. Johnson, May 23, 1896, a third by Dr. W. A. Nason, August 16, 1895, and six captured by Prof. H. Garman. Type No. 3518, U. S. National Museum ..... *calyptrata* n. sp.

Genus ALOPHORA Desv.

Alophora Desvoidy, Essai sur les Myodaires, p. 293; 1830.
Hyalomyia Desvoidy, loc. cit., p. 298.

Schiner[1] has already referred these two divisions as subgenera of the first-mentioned genus, and in this he is followed by Brauer and Bergenstamm.[2] Of the ten species occurring in our fauna, the females of only four are known to me:

1. Wings distinctly marked with brown beyond base of discal cell outside of the costal cell (all males) ..... 6.
   Wings wholly hyaline beyond base of discal cell except sometimes in the costal cell ..... 2.
2. Second and third abdominal segments shining or subshining .... 3.
   Second and following segments opaque, densely yellow gray pollinose; thorax, when viewed from behind, thinly white pollinose along the suture, in front of the scutellum, and along the sides; eyes contiguous; black, the palpi yellow, calypteres white, wings whitish hyaline, costa strongly arcuate, last section of third vein slightly less than one-third as long as the preceding section; length, 5 mm. Eastern Washington. A single male specimen collected by Professor Piper. Type No. 3519, U. S. National Museum ..... *opaca* n. sp.

[1] Fauna Austriaca, Vol. I, p. 402; 1862.
[2] Zweif. Kais. Mus. Wien, IV, p. 149; 1889. Also loc. cit., VI, p. 157; 1893.

3. Females; genitalia awl-shaped, directed backward ..... 4.
Males; genitalia tubular, directed forward under the body; black, the palpi yellow, abdomen with a pronounced brassy tinge, shining, thinly white pollinose; thorax when viewed from behind thinly white pollinose except the front end and two subdorsal vittæ behind the suture; eyes separated as widely as the posterior ocelli, calypteres grayish white, wings whitish hyaline, base to tip of second basal cell yellow, costa strongly arcuate, last section of third vein nearly half as long as the preceding section; length, 6 mm. Potomac Creek, Virginia. A single male specimen collected May 23, 1896, by C. W. Johnson. Type No. 3520, U. S. National Museum ..... *nitida* n. sp.

4. Frontal vitta at narrowest part less than one-third as wide as the distance between the posterior ocelli ..... 5.
Frontal vitta at narrowest part as wide as the distance between the posterior ocelli; last section of third vein slightly over one-third as long as the preceding section; length, 4 to 6 mm. White Mountains and Franconia, N. H., and Potomac Creek, Virginia. (Trans. Amer. Ent. Soc., Vol. XIII, p. 296; October, 1886: *Hyalomyia.*) ..... *æneoventris* Will.

5. Last section of third vein over one-third as long as the preceding section, small crossvein nearer to tip of first vein than to tip of the auxiliary, or midway between them; black, the palpi yellow; thorax, when viewed from behind, subopaque whitish pollinose, with indistinct black vittæ; eyes separated slightly wider than width of lowest ocellus; face white or gray pollinose; abdomen on the last three segments whitish pollinose, the second and third segments with a black dorsal vitta; calypteres whitish or yellowish; wings hyaline, the base to slightly beyond the humeral crossvein yellowish; length, 9 mm. Beverly, Mass. A female specimen collected October 11, 1870, by the late Edw. Burgess. Type No. 3521, U. S. National Museum .. *diversa* n sp.
Last section, etc., as above; vitta of abdomen indistinct; length, 5 mm. Two females, one captured at Sherbrooke, Canada, September 25, 1896, by L'Abbé P. A. Begin, the other taken with the male (see above under 3) ..... *nitida* n. sp.
Last section of third vein less than one-sixth as long as the preceding section, small crossvein nearer to tip of auxiliary vein than to tip of first vein; eyes separated about half the width of the lowest ocellus; face yellow pollinose, abdomen wholly thinly whitish pollinose; length, 9 to 10 mm.; otherwise as in *diversa*. Lufkin, Tex. (October 17, 1894; C. W. Johnson), and southern Illinois (Charles Robertson). Two female specimens. Type No. 3522, U. S. National Museum ..... *grandis* n. sp.

6. Thorax destitute of a large spot of yellowish pollen in front of the scutellum ..... 7.

Thorax bearing a large spot of yellowish pollen, elsewhere subopaque, the sides and suture gray pollinose; abdomen shining bluish black, the margin sometimes yellow, on the fourth segment grayish pollinose; wings hyaline, brownish costally except at base, the brown color extending to middle of discal cell, sometimes forming a border to the fifth vein and the hind crossvein, and containing hyaline spaces; length, 6 to 7 mm. White Mountains and Franconia, N. H. (Annales Soc. Entomol. France, p. 255; 1888. *Hyalomyia* sp., Brauer and Bergenstamm *in litt.*) ..... *fenestrata* Bigot.

7. Wings destitute of a distinct hyaline spot beyond tip of first vein. 8.

Wings marked with such a spot reaching from near the costa to middle of first posterior cell, elsewhere brown, with hyaline spaces and hind margin; costa excessively arcuate, first posterior cell over half as wide as long; black, the palpi yellow, abdomen shining brassy black, thinly whitish pollinose, thorax, when viewed from behind, subopaque, thinly whitish pollinose, two subdorsal vittæ, the front end, and behind the suture black; calypteres white; frontal vitta at narrowest part two-thirds as wide as distance between the posterior ocelli; length, 8 mm. Franconia, N. H. A male specimen, collected by Mrs. A. T. Slosson. Type No. 3523, U. S. National Museum. . *phasioides* n. sp.

8. Abdomen more or less shining ..... 10.

Abdomen opaque, yellowish gray pollinose ..... 9.

9. Veins on front and hind edges of discal cell bordered with brown; black, the palpi yellow; thorax, when viewed from behind, thinly whitish pollinose, the front end, behind the suture, and two subdorsal vittæ black; frontal vitta at narrowest part half as wide as distance between the posterior ocelli; calypteres whitish; wings brown, the base yellowish, the hind margin and centers of discal and first posterior cells usually hyaline, costa rather strongly arcuate; length, 4.5 to 6 mm. Clementon, N. J. (May 10 and 26, 1896), and Potomac Creek, Va. (May 23, 1896). Six male specimens, collected by C. W. Johnson. Type No. 3524, U. S. National Museum ..... *fumosa* n. sp.

Veins on front and hind edges of discal cell not bordered with brown, wings whitish hyaline, the base to beyond the humeral crossvein yellowish, costal margin beyond this to slightly below apex of third vein, last two sections of third vein, and fourth vein beyond the bend bordered with smoky brown, costa excessively arcuated; length, 7 mm.; otherwise as in the above description of *fumosa*. Grimsby, Canada. A single male specimen, collected October 7, 1894. Type No. 3525, U. S. National Museum ..... *pulverea*, n. sp.

10. Length, 6 mm. or less; last section of third vein over one-third as long as the preceding section ..... 11.
Length, 8 to 10 mm ..... 12.

11. Abdomen shining brassy black, the margins whitish pollinose, wings hyaline, the base and a large spot on middle extending from costa to fifth vein smoky. (See above under 4.)
æneoventris Will.
Abdomen subopaque whitish pollinose, the first segment, a dorsal vitta on the others, and the hind margins of the second and third black; black, the palpi yellow; thorax, when viewed from behind, subopaque, traces of a yellowish pollinose spot in front of the scutellum; eyes separated slightly wider than width of lowest ocellus, wings smoky, the hind margin subhyaline; calypteres yellowish; length, 6 mm. Woodbury, N. J. A single male specimen, collected June 7, 1896, by C. W. Johnson. Type No. 3526, U. S. National Museum..... *subopaca* n. sp.

12. Last section of third vein less than one-sixth as long as the preceding section, small crossvein nearer to tip of auxiliary vein than to tip of first vein, eyes separated less than width of lowest ocellus, wings from base almost to small crossvein dusky yellowish, the remainder brown, calypteres brown, the margin, the lower edge of the front one broadly, and of the hind one at its base white; otherwise as in the female (under 5 above). Lufkin, Tex., October 17, 1896. A single male specimen, collected by C. W. Johnson..... *grandis* n. sp.
Last section of third vein over one-fourth as long as the preceding section, small crossvein not nearer to tip of auxiliary vein than to tip of first vein, eyes separated one and one-half times width of lowest ocellus, abdomen with a strong brassy or violaceous tinge, wings from base to beyond base of discal cell yellowish, the remainder brown, the hind margin subhyaline; otherwise as in the female (under 5 above). Beverly, Mass. (October 11, 1870, Edw. Burgess); Oswego, N. Y. (October 4, 1895, C. W. Johnson), and Indiana. Three male specimens.. *diversa* n. sp.

Genus TRICHOPODA Latr.

Trichopoda Latreille, in Cuvier's Regne animal, Vol. V; 1829.

Our species have one postsutural and two sternopleural macrochætæ, apical cell short petiolate:

1. Abdomen partly or wholly yellowish..... 2.
Abdomen and legs wholly black, the former not pollinose; wings black, not marked with white or yellow, the hind margin subhyaline; lower calypteres brown, the bases white; thorax deep black, the sides, transverse suture, and two subdorsal vittæ in front of it light gray pollinose; length, 10 to 14 mm. Florida; Waco, Tex., and Colorado. (Systema Antliatorum, p. 220; 1805: *Thereva*.)..... *lanipes* Fabr.

2. Without any fasciæ of gray pollen on the abdomen, which is subshining and almost or wholly destitute of pollen ..... 3.

   With an opaque, interrupted fascia of yellowish pollen on the second, third, and fourth segments of the abdomen; scutellum and femora yellow, thorax shining black, the portion in front of the transverse suture yellowish pollinose and marked with three or four black vittæ; wings brown, the costal margin more or less yellow, the hind margin broadly hyaline; lower calypteres yellowish; length, 7 to 11 mm. District of Columbia; Texas, and Napa County, Cal. (Systema Antliatorum, p. 220; 1805: *Thereva. Trichopoda histrio* Walker, List of Dipterous Insects, Part IV, p. 697; 1849. *Trichopoda trifasciata* Loew, Dipt. Amer. Sept. Indigena, Centuria IV, No. 90; 1863: also Brauer and Bergenstamm *in litt.*) ..... *plumipes* Fabr.

3. Lower calypteres wholly yellowish; abdomen bright yellow, the apex sometimes black; legs black, bases of femora sometimes yellow, hind margin of wings subhyaline ..... 4.

   Lower calypteres brown, the bases white; abdomen yellowish brown, the fifth segment yellow, legs black, the bases of the middle and hind femora sometimes yellow; wings brown, a white vitta along each of the first five veins, hind margin subhyaline; length 14 to 17 mm. District of Columbia; Waco, Tex., and Tehuantepec, Mexico. (Aussereuropäische Zweif. Insekten, Vol. II, p. 268; 1830. *Trichopoda radiata* Loew, Dipt. Amer. Sept. Indigena, Centuria IV, No. 89; 1863: also Brauer and Bergenstamm *in litt.*) ..... *formosa* Wied.

4. Penultimate section of fourth vein of male bordered in front with whitish, the first five veins usually partly bordered with white, a yellowish spot on front part of each wing of the male; length, 9 to 14 mm. West Roxbury, Mass.; District of Columbia; Virginia; Tifton, Ga.; Biscayne Bay, Florida; Cadet, Mo.; Douglas County, Kans., and Texas. (Aussereuropäische Zweif. Insekten, Vol. II, p. 276; 1830. *Thereva pennipes* Fabricius, Systema Antliat., p. 219; 1805: *non Musca pennipes* Fabricius; 1794. *Trichopoda aurantiaca* Townsend, Proc. Ent. Soc. Washington, Vol. II, p. 140; April 2, 1891.) ..... *cilipes* Wied.

   Penultimate section of fourth vein not bordered with whitish in either sex, any of the veins rarely bordered with whitish; wings of male usually but not always marked in front with a yellow spot; length, 7 to 12 mm. Grimsby, Canada; Belmont, Mass.; Philadelphia, Pa.; District of Columbia; North Carolina; Florida; Mississippi; Lexington, Ky.; Missouri; Onaga, Kans.; Colorado; Los Angeles County, Cal., and Mexico. (Entomologia Systematica, Vol. IV, p. 348; 1794: *Musca. Thereva hirtipes* Fabricius, Systema Antliat., p. 219; 1805. *Ocyptera ciliata* Fabricius, loc. cit., p. 315. *Phasia jugatoria* Say, Jour. Acad. Nat.

Sci. Philadelphia, Vol. VI, p. 172; 1829. *Trichopoda flavicornis* Desvoidy, Essai sur les Myodaires, p. 284; 1830. *Trichopoda pyrrhogaster* Wiedemann, Aussereur. Zweif. Ins., Vol. II, p. 272; 1830: also Brauer and Bergenstamm *in litt.*).....*pennipes* Fabr.

Genus EUSIPHONA, new genus.

The principal characters of this genus may be gathered from the following description of the type species: Front of female nearly one-half as wide as either eye, ocellar bristles directed obliquely forward, frontal bristles weak, disposed in four rows, not descending beneath base of antennæ, front, including the vitta, gray pollinose; sides of face bare, gray pollinose, each at narrowest point about one-seventh as wide as the median depression, the latter with a distinct median carina; vibrissæ short, inserted below the level of the anterior portion of the oral margin; facial ridges bare, nearly parallel and only slightly approaching each other at the vibrissæ; cheeks extremely narrow, scarcely apparent; proboscis bristle-like, longer than the entire insect, geniculate in the middle, the apical half folding beneath the basal half; labella absent, palpi clavate, reaching about halfway to the anterior oral margin; antennæ four-fifths as long as the face, the third joint nearly three times as long as the second, suborbicular; arista bare, thickened on the basal third, the penultimate joint shorter than broad; eyes bare; thorax lightly gray pollinose, anterior half of middle of dorsum destitute of macrochætæ, two postsutural and two sternopleural macrochætæ, the latter near the posterior end of the sternopleura, no other macrochætæ on the pleura; scutellum subtriangular, bearing four marginal macrochætæ; abdomen and legs destitute of macrochætæ and of pollen; wings hyaline, veins bare, apical cell open at the extreme wing tip, last section of fourth vein gradually approaching the third, small crossvein near last third of discal cell, auxiliary vein lying close to the first and almost united with it at the apex. Color, black; the second antennal joint, spot at insertion of antennæ, and the anterior oral margin yellow; calypteres small, white; length, 5 mm. Indiana and Colorado. Two female specimens. Type No. 3526, U. S. National Museum.....*mira* n. sp.

Genus GYMNOPHANIA Br. and Berg.

Gymnophania Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 143; 1889.

Our single species is black, the antennæ and legs tinged with brown; front in male slightly narrower than width of the lowest ocellus, antennæ four-fifths as long as the face, the third joint slightly shorter than the second, cheeks one-seventh as broad as the eye height; body shining, not pollinose, only one postsutural and one sternopleural macrochæta, scutellum bearing two marginal pairs, abdomen and legs destitute of macrochætæ; wings hyaline, the costal margin beyond tip

of auxiliary vein slightly smoky as far as the fourth vein, last sections of third and fourth veins gradually converging, ending a short distance from each other at the extreme wing tip, small crossvein at last fourth of discal cell; calypteres white; length, 4 mm. White Mountains, New Hampshire. Five male specimens, one collected by Mrs. A. T. Slosson and the others by the late H. K. Morrison. (*Gymnophania* sp., Brauer and Bergenstamm *in litt.*) Type No. 3528, U. S. National Museum ..... *montana* n. sp.

Genus MYIOPHASIA Br. and Berg.

Myiophasia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V., p. 362; 1891.
Phasioclista Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 369; December, 1891.
Ennyomma Townsend, loc. cit., p. 371.

The synonymy of the first two has already been given by Brauer and Bergenstamm.[1] Our two species have three postsutural and two sterno pleural macrochætæ; eyes usually bare but sometimes hairy, especially in the male:

Third and other segments of abdomen shining, destitute of pollen; greenish black, the lower part of the head except on the occiput, also more or less of the antennæ, yellow or brown; bases of the wings yellow; length, 6 to 9 mm. White Mountains, New Hampshire; Massachusetts; South Carolina; Georgia; Charlotte Harbor, Florida; Colorado; and Santa Fe, N. Mex. (Aussereuropäische Zweif. Insekten, Vol. II, p. 298; 1830: *Tachina. Clytia atra* Desvoidy, Essai sur les Myodaires, p. 288; 1830. *Phasioclista metallica* Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 370; Dec., 1891. *Ennyomma clistoides* Townsend, loc. cit., p. 371. *Loewia ruficornis* Townsend, Canadian Entomologist, Vol. XXIV, p. 77; April, 1892. *Loewia nigrifrons* Townsend, loc. cit. *Clista americana* Townsend, loc. cit., p. 78. *Loewia globosa* Townsend, Entomological News, Vol. III, p. 129; June, 1892. *Myiophasia ?ænea* Wied., Brauer and Bergenstamm *in litt.*) ..... *ænea* Wied.

Third and fourth segments of abdomen, and center of the second, subopaque gray pollinose; black, the second joint of antennæ yellow, the frontal vitta and lower part of the head except the occiput brown; front of male scarcely wider than width of lowest ocellus, frontal bristles not descending below base of second antennal joint, antennæ almost reaching middle of face, the third joint only slightly longer than the second, arista thickened on its basal fourth, the penultimate joint slightly longer than wide; thorax and scutellum with a bronze tinge, destitute of pollen, scutellum bearing three pairs of long marginal macrochætæ; second segment of abdomen bearing a marginal pair, the third and fourth each with a marginal row; pulvilli of front tarsi slightly longer than the last tarsal joint, wings hyaline, calypteres yellowish white; length, 9

[1] Zweif. Kais. Mus. Wien, VI, p. 192; 1893.

mm. Los Angeles, Cal. A single male specimen bred by Albert Koebele from a larva of *Sphenophorus robustus*. Type No. 3529, U. S. National Museum.....*robusta* n. sp.

Genus PHYTO Desv.

Phyto Desvoidy, Essai sur les Myodaires, p. 218; 1830.
Savia Rondani, Dipterologiæ Italicæ Prodromus, Vol. IV, p. 140; 1861.

This synonymy is given by Brauer and Bergenstamm.[1] Our species is black, including the palpi, cheeks largely reddish; front in male destitute of orbital bristles, in the female bearing two pairs; three postsutural and three sternopleural macrochætæ; length, 6 to 8 mm. Northern Illinois and Missouri. (List of Dipterous Insects, Part IV, p. 757; 1849: *Tachina*. *Phyto setosa* Coquillett, Journ. N. Y. Ent. Soc., Vol. III, p. 99; Sept., 1895.).....*clesides* Walk.

Genus MAUROMYIA, new genus.

The characters of this genus may be gleaned from the following description of the type species: Black, the palpi yellow; front in the male one and two-thirds times, in the female slightly over twice, as wide as either eye, ocellar bristles projecting obliquely forward, two pairs of orbital bristles in the female, none in the male, frontal bristles descending to base of third antennal joint, sides of face at narrowest point each one-third as wide as the median depression, thickly covered with black bristles, cheeks in the male slightly narrower, in the female broader, than the eye height, vibrissæ widely separated, inserted on a line with the front edge of the oral margin, facial ridges bristly on the lowest fourth or third, facial depression carinate in the middle, antennæ reaching the oral margin in the male, but only reaching to lowest fourth of face in the female, third joint in the male six, in the female three, times as long as the second, arista thickened on the basal half, the penultimate joint slightly longer than broad; palpi clavate, short, less than half as long as the proboscis beyond the basal articulation, the latter slightly over one-half as long as height of head, eyes bare, head in profile nearly quadrangular, as long at the vibrissæ as at base of antennæ, the face slightly concave; thorax gray pollinose, marked with three black vittæ, three postsutural and two sternopleural macrochætæ, scutellum bearing three long marginal pairs; abdomen shining, last three segments whitish pollinose at the bases, bearing discal and marginal macrochætæ; wings hyaline, tinged with smoky along the veins, third vein bristly two-thirds of distance from base to small crossvein, hind crossvein slightly curved, nearly perpendicular, situated midway between the small and the bend, the latter nearly rectangular and bearing a short appendage, apical cell closed and petiolate, the petiole almost as long as the hind crossvein; calypteres whitish; hind

[1] Zweif. Kais. Mus. Wien, VI, p. 237; 1893.

tibiæ not ciliate, front pulvilli one-half as long as the last tarsal joint; length, 5 to 6 mm. White Mountains, New Hampshire. A specimen of each sex collected by the late H. K. Morrison. Type No. 3530, U. S. National Museum..... *pulla* n. sp.

Genus CRYPTOMEIGENIA Br. and Berg.

Cryptomeigenia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 311; 1891.
Emphanopteryx Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 120; May, 1892.

The above synonymy has already been published by Brauer and Bergenstamm.[1] Our single species is black, the second joint of the antennæ, the palpi, tibiæ, and femora partly or wholly yellow; three postsutural and three sternopleural macrochætæ; length 7 to 10 mm. Toronto, Canada; Franconia, N. H.; Beverly, Mass.; Ithaca, N. Y.; District of Columbia; and Illinois. (List Dipt. Insects, Part IV, p. 778; 1849: *Tachina. Tachina prisca* Walker, loc. cit, p. 780. *Emphanopteryx eumyothyroides* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 121; May, 1892. Near *Pexomyia*, Brauer and Bergenstamm *in litt.*)..*theutis* Walk.

Genus CERATOMYIELLA Town.

Ceratomyiella Townsend, Trans. Am. Ent. Soc., Vol. XVIII, p. 379; Dec., 1891.

Our single species is black, the palpi, base of antennæ, and the femora yellow, the tibiæ brownish yellow; three postsutural and two sternopleural macrochætæ; length, 5 mm. District of Columbia, southern Illinois, and Tifton, Ga. (Trans. Amer. Ent. Soc., Vol. XVIII, p. 380; December, 1891.)..... *conica* Town.

Genus EULASIONA Town.

Eulasiona Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 119; May, 1892.

Our species have three postsutural and two sternopleural macrochætæ:

1. Third vein bearing a single bristle near its base, middle tibiæ each bearing a single long macrochæta on the front side near the middle, wings hyline, the bases yellowish; length, 5 to 7 mm. White Mountains and Franconia, N. H., and Georgia. (Trans. Amer. Ent. Soc., Vol. XIX, p. 120; May, 1892.)..... *comstockii* Town.

   Third vein bearing three or more bristles at the base, middle tibiæ each bearing three or more long macrochætæ on the front side near the middle..... 2.

2. Sides of face each bearing a row of macrochætæ; black, the tibiæ largely yellowish; front in female slightly wider than either eye, sides gray pollinose, two pairs of orbital bristles, frontal bristles descending slightly below base of second antennal joint, antennæ five-sixths as long as the face, the third joint two and one-fourth times as long as the second, arista thickened to the middle, the penultimate joint slightly longer than broad;

[1] Zweif. Kais. Mus. Wien, VI, p. 199; 1893.

sides of face bare except for the row of macrochætæ, cheeks two-fifths as wide as the eye-height; thorax thinly gray pollinose, marked with four black vittæ; scutellum bearing three pairs of long marginal macrochætæ; abdomen subshining, bases of last three segments lightly whitish pollinose, first segment bearing a marginal pair, second with a discal and a marginal pair of macrochætæ, third with a discal pair and a marginal row, fourth wholly covered except the extreme base; wings tinged with brown along the veins; calypteres yellowish white; length, 7 mm. Fort Wrangel, Alaska. A single female specimen collected by H. F. Wickham. Type No. 3531, U. S. National Museum ..... *spinosa* n. sp.

Sides of face each bearing only one or two macrochætæ, situated near lower end of eyes; black, the antennæ, palpi, tip of scutellum and fourth segment of abdomen yellow; front in both sexes one and two-thirds times as wide as either eye, the sides and face yellowish pollinose, two pairs of orbital bristles, frontals descending to base of third antennal joint, sides of face covered with black bristly hairs, cheeks three-fourths as broad as the eye-height, antennae three-fourths as long as face, the third joint six times as long as the second, arista thickened on the basal third or half; thorax gray pollinose, marked with three black vittæ, scutellum bearing three long marginal pairs and a short apical pair of macrochætæ; abdomen thinly gray pollinose, subshining, last three segments bearing discal macrochætæ; wings subhyaline, veins faintly clouded with brown; length, 6 to 7 mm. Opelousas, La. Three males and one female collected in March, 1897, by Mr. G. R. Pilate ..... *setigena* n. sp.

Genus ADMONTIA Br. and Berg.

Admontia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 104; 1889.

On page 410 of Part V of the above-mentioned work, a species from "N. Amer." is listed as "*Admontia americana* n.," but no description of it has to my knowledge been published. Our four species have only three postsutural macrochætæ:

1. Wings wholly hyaline, or slightly smoky costally, usually three sternopleural macrochætæ ..... 2.

   Wings whitish hyaline to small crossvein, the remainder brown except the hind margin, which is hyaline; only two sternopleural macrochætæ, palpi yellow, legs black, arista thickened to beyond the middle, cheeks one-half as broad as the eye height; length, 7 mm. Northern Illinois. (Journ. N. Y. Ent. Soc., Vol. III, p. 55; June, 1895.) ..... *nasoni* Coq.

2. Legs black, two pairs of orbital bristles in both sexes ..... 3.

   Legs and palpi yellow, no orbital bristles in the male, arista thickened on less than the basal third, cheeks one-third as broad as

the eye-height, abdomen of female thickly beset with short spines on under sides of the third and fourth segments; length, 8 to 10 mm. Maryland, Dist. Columbia, and Virginia. (List Dipt. Insects, Part IV, p. 779; 1849: *Tachina.*) . . *demylus* Walk.

3. Palpi black, third antennal joint in the male eight, in the female from five to seven, times as long as the second; cheeks at least one-half as wide as the eye-height, front tarsi of female greatly dilated, abdomen destitute of stout spines on the under side. 4.

Palpi yellow, insect otherwise black; front of male as wide as either eye, frontal bristles descending to apex of second antennal joint, the pair in front of vertical ones not directed outward, cheeks one-third as broad as the eye-height, sides of face at narrowest part each one-sixth as wide as the median depression, each bearing a row of bristly hairs, vibrissæ on a level with front edge of the oral margin, ridges bristly on the lowest fourth, antennæ as long as the face, the third joint four times as long as the second, arista thickened on the basal third, the penultimate joint as broad as long; thorax gray pollinose, marked with four black vittæ, scutellum bearing three pairs of long marginal and a very short apical pair of macrochætæ; abdomen thinly gray pollinose, first segment bearing marginal, the others discal and marginal macrochætæ; front pulvilli scarcely one-half as long as the last tarsal joint; wings hyaline, third vein bearing three bristles near the base, calypteres white; length, 5 mm. Alameda, Cal. Two males bred April 17, 1888, from chrysalids of *Retinia* sp. by Mr. Albert Koebele. Type No. 3532, U. S. National Museum . . . . . *retiniæ* n. sp.

4. Front in the male one and one-third times, in the female twice, as wide as either eye; the pair of frontal bristles in front of the vertical ones directed obliquely outward, arista thickened on the basal three-fifths, sides of face each bearing numerous hairs not arranged in a single row, the sides yellowish gray pollinose; length, 5 to 8 mm. From the type specimen. Beverly, Mass.; District of Columbia, and Agricultural College, Miss. (Journ. N. Y. Ent. Soc., Vol. III, p. 54; June, 1895.) . . . . *pergandei* Coq.

Front in the male slightly wider than, in the female one and one-fourth times as wide as, either eye; the pair of frontal bristles in front of the vertical ones almost perpendicular, arista thickened on the basal two-fifths, sides of face white pollinose, each bearing a single row of hairs; length, 5 to 6 mm. From the type specimen. Franconia, N. H.; Beverly, Mass.; District of Columbia; Illinois, and Tifton, Ga. (Journal N. Y. Ent. Soc., Vol. III, p. 58; June, 1895: *Hypostena.*) . . . . . *degeerioides* Coq.

Genus MEDINA Desv.

Medina Desvoidy, Essai sur les Myodaires, p. 138; 1830.
Degeeria Meigen, System. Besch. Europ. Zwei. Insekten, Vol. VII, p. 249; 1838.
Amedoria Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 106; 1889.

The synonymy of the first two is according to Schiner.[1] Brauer and Bergenstamm state[2] that Desvoidy placed in Medina species belonging to Admontia and Degeeria, but they do not specify which of these species belong to Admontia. Since all of the recognized species placed in Medina by Desvoidy at the time of describing this genus belong to Degeeria, there would appear to be no doubt concerning the identity of these two genera. The identity of Amedoria with Degeeria has already been acknowledged by Brauer and Bergenstamm.[3] Our single species is black, with a brown tinge, the calypteres yellow, the wings strongly tinged with brown at the base and in front of the fifth vein; three postsutural and three sternopleural macrochætæ, discal macrochætæ on the last three segments of the abdomen; length, 9 mm. From the type specimen. Mount Washington, New Hampshire. (Journal N. Y. Ent. Soc., Vol. III, p. 104; Sept., 1895: *Degeeria.*) ..... *washingtonæ* Coq.

Genus SCHIZOTACHINA Walk.

Schizotachina Walker, Insecta Saundersiana, Vol. I, p. 264; 1856.

Our single species is black, the antennæ sometimes largely, and the palpi, yellow; three postsutural and two large and two small sternopleural macrochætæ, second and third segments of abdomen bearing only marginal ones; wings hyaline, third vein bearing a single bristle at the base; length, 4 to 6 mm. Horseneck Beach, Mass.; Waco, Tex.; and Colorado. (Insecta Saundersiana, Vol. I, p. 276; 1856: *Tachina. Tachina exul* Walker, loc. cit., p. 277.) ..... *convecta* Walk.

Genus CLAUSICELLA Rond.

Clausicella Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 61; 1856.

Our species have three postsutural and three sternopleural macrochætæ, body black, the abdomen sometimes with a brassy or violaceous tinge, bearing only marginal macrochætæ:

1. Wings wholly hyaline, orbital bristles present in both sexes ..... 2.
   Wings from base to tip of auxiliary vein whitish, thence to tip of second vein brown, the apex and hind margin behind the fifth vein hyaline, third vein bearing a single bristle near its base; black, the abdomen with a strong violaceous tinge; front of female one and one-third times as wide as either eye, two pairs

[1] Fauna Austriaca, Vol. I, p. 533; 1862.
[2] Zweif. Kais. Mus. Wien, VI, p. 232; 1893.
[3] Zweif. Kais. Mus. Wien, V, p. 356; 1891.

of orbital bristles, frontal bristles descending to middle of second antennal joint, antennæ as long as the face, the third joint three times as long as the second, two and one-half times as long as wide, arista thickened on the basal two-thirds, the penultimate joint three times as long as broad, two-fifths as long as the last joint; vibrissæ slightly below level of front edge of oral margin, only two or three bristles above each; thorax gray pollinose, not vittate, scutellum the same, bearing two pairs of long marginal macrochætæ and a short apical pair; abdomen gray pollinose on bases of the second and third segments, second segment bearing a marginal pair of macrochætæ, the third with a marginal, the fourth with a discal, row; calypteres white; length, 4 mm. Natrona, Pa. A single female specimen collected by Mr. C. W. Johnson, July 31, 1895. Type No. 3536, U. S. National Museum ..... *johnsoni* n. sp.

2. Third joint of antennæ in the male truncate at the apex, where it is over twice as wide as at its base, its upper edge nearly straight; length, 3 mm. Southern California; and Owl Creek Mountains, Wyoming. (Konig. Sven. Fregatt. Eugenies Resa, p. 527; 1868: *Lophosia. Clausicella antennalis* Coquillett, Journal N. Y. Ent. Soc., Vol. III, p. 56; June, 1895.) ..... *setigera* Thom.

Third joint rounded at the apex where it is at most one and one-half times as broad as at its base ..... 3.

3. Last joint of front tarsi of female over four times as long as the second, third joint of antennæ of male nearly straight on upper edge, noticeably longer than wide; length 3 to 4 mm. White Mountains, New Hampshire; Lakeland, Md.; and Northern Illinois. (Journal N. Y. Ent. Soc., Vol. III, p. 56; June, 1895. New genus near *Bigonichæta*, Brauer and Bergenstamm *in litt.*) ..... *tarsalis* Coq.

Last joint of front tarsi of female shorter than the second, third joint of antennæ of male strongly convex on upper side, only slightly longer than wide; black, the palpi yellow; front in both sexes one and one-half times as wide as either eye, two pairs of orbital bristles, frontals descending almost to tip of second antennal joint, facial ridges bristly on the lowest two-fifths to one-half, antennæ almost as long as the face, the third joint five times as long on the second, arista thickened nearly to the tip, the penultimate joint two-thirds as long as the last one; thorax gray pollinose, not black vittate, abdomen shining, bases of last three segments whitish pollinose except in the middle; wings hyaline, third vein bearing one or two bristles at the base, calypteres whitish; length, 3 to 3.5 mm. White Mountains, New Hampshire, and New Bedford, Mass. Three males and one female, the former collected by the late H. K. Morrison, the latter by Dr. Hough ..... *usitata* n. sp.

Genus PLECTOPS, new genus.

The characters of this genus may be gleaned from the table of genera given on a previous page and from the following description of the type species: Black, the palpi and apex of proboscis yellow; front in both sexes one and one-fourth times as wide as either eye, two pairs of orbital bristles, frontal bristles descending almost to apex of second antennal joint, cheeks one-fifth as broad as the eye height, eyes bare, head at vibrissæ much shorter than at base of antennæ, vibrissæ inserted on a line with front edge of the oral margin, one or two bristles above each, antennæ as long as the face, the third joint in the male three-fifths, in the female two-fifths, as broad as long, five times as long as the second, arista bare, thickened on the basal two-thirds, the penultimate joint four times as long as broad, almost one-half as long as the last joint; thorax gray pollinose, marked with four black vittæ; three postsutural and four sternopleural macrochætæ, scutellum bearing two long marginal pairs; abdomen shining, the bases of the last three segments narrowly white pollinose, bearing only marginal macrochætæ; wings hyaline, first vein bearing two or three bristles toward the tip, third vein bearing a single one at the base, hind crossvein nearly straight, midway between the small and the bend, the latter obtuse, not appendiculate, apical cell open, terminating at the extreme wing tip; calypteres white; last two joints of front tarsi of female dilated, the claws and pulvilli scarcely one-third as long as the last tarsal joint, front tarsi of male not dilated, the pulvilli slightly longer than the last tarsal joint, middle tibiæ each bearing a single bristle on the front side near the middle, hind tibiæ not ciliate; length, 4 to 5 mm. District of Columbia, and Kirkwood, Mo. Five males and one female bred from *Melissopus latiferreana* Wlsm. by Miss Mary E. Murtfeldt and this Division. Type No. 3541, U. S. National Museum.....*melissopodis* n. sp.

Genus LISPIDEA Coq.

Lispidea Coquillett, Journal N. Y. Ent. Soc., Vol. III, p. 51; June, 1895.

Our single species is black, with yellow palpi; three postsutural and two sternopleural macrochætæ; length 4 to 5 mm. Canada and northern Illinois. (Loc. cit., p. 52.).....*palpigera* Coq.

Genus THRYPTOCERA Macq.

Thryptocera Macquart, Histoire Nat. Insectes, Diptères, Vol. II, p. 87; 1835.
Herbstia Desvoidy, Annales Soc. Ent. France, p. 184; 1851. (*Non* Edwards; 1834.)

This synonymy is given by Rondani[1] and repeated by Schiner;[2]

[1] Dipterologiæ Italicæ Prodromus, Vol. III, p. 12; 1859.
[2] Fauna Austriaca, Vol. I, p. 517; 1862.

Herbstia is not mentioned by Brauer and Bergenstamm:

Penultimate joint of arista twice as long as broad, one-sixth as long as the last joint, legs black; black, the first two joints of antennæ, palpi, apex of proboscis, of scutellum, and sides of the first two segments of abdomen, yellow; third joint of antennæ brown; head at vibrissæ as long as at base of antennæ, front of female one and one-fifth times as wide as either eye, frontal bristles descending to base of third antennal joint, two pairs of orbital bristles, cheeks one-fifth as broad as the eye-height, vibrissæ on a level with front edge of oral margin, ridges bristly on the lowest fourth, antennæ nearly as long as the face, the third joint five times as long as the second, arista thickened on the basal three-fourths; thorax gray pollinose, marked with four black vittæ; three postsutural and three sternopleural macrochætæ, scutellum bearing two long marginal pairs and a very short apical pair; abdomen subopaque gray pollinose, last three segments bearing marginal macrochætæ; front tarsi slender; wings hyaline, third vein bristly halfway to small crossvein, hind crossvein midway between the small and the bend, calypteres white; length, 6 mm. New Bedford, Mass. A single female specimen, collected by Dr. Garry deN. Hough. Type No. 3543, U. S. National Museum ..... *atripes* n. sp.

Penultimate joint of arista nearly one-half as long as the last joint, femora and tibiæ yellow; frontal vitta, face and cheeks yellow, only one or two bristles above each vibrissa, third joint of antennæ three times as long as the second, arista thickened on the basal two-thirds, thorax not distinctly vittate, scutellum bearing three long marginal pairs of macrochætæ, third vein bristly almost to the small crossvein; length 4 mm.; otherwise as in the above description of *atripes*. White Mountains, New Hampshire. Two female specimens collected by Mrs. A. T. Slosson and the late H. K. Morrison. Type No. 3544, U. S. National Museum ..... *flavipes* n. sp.

Genus ACTIA Desv.

Actia Desvoidy, Essai sur les Myodaires, p. 85; 1830.
Ceromya Desvoidy, loc. cit., p. 86.
Gymnopareia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 103; 1889.

This synonymy is according to Brauer and Bergenstamm.[1] Our two species have four postsutural and three sternopleural macrochætæ:

First vein bristly on its apical third only, frontal vitta next the antennæ twice as wide as either side of the front, abdomen and legs yellow; length 5 mm. From the type specimen. White Mountain, New Hampshire. (Journal N. Y. Ent. Soc., Vol. III, p. 50; June, 1895: *Lasioneura. Gymnopareia* sp., Brauer and Bergenstamm *in litt.*) ..... *palloris* Coq.

[1] Loc. cit., VI, pp. 226 and 228; 1893.

First vein bristly on nearly its entire length, frontal vitta next the antennæ scarcely wider than either side of the front, abdomen and legs varying from yellow to black, fourth vein sometimes almost obsolete beyond the bend; length, 4 to 6 mm. White Mountains and Franconia, N. H.; District of Columbia; southern Illinois, and Germany. A female specimen from Germany received from Zeller, and by him labeled *Thryptocera pilipennis* Fall. (Diptera Sueciæ, Muscidæ, p. 18; 1820: *Tachina. Thryptocera americana* Townsend, Canadian Entomologist, Vol. XXIV, p. 69; March, 1892. *Gymnopareia* sp., Brauer and Bergenstamm *in litt.*) ..... *pilipennis* Fallen.

Genus LASIONEURA Coq.

Lasioneura Coquillett, Journal N. Y. Ent. Soc., Vol. III, p. 50; June, 1895.

Our species is black, the frontal vitta, first two joints of antennæ, face, cheeks, palpi, coxæ, femora, tibiæ and sides of abdomen at base, yellow; three postsutural and three sternopleural macrochætæ; length, 5 mm. From the type specimen. Santa Cruz County, Cal.; and Washington. (Loc. cit.) ..... *johnsoni* Coq.

Genus CHÆTOPHLEPS Coq.

Chætophleps Coquillett, Journal New York Ent. Soc., Vol. III, p. 51; June, 1895.

Our single species is black, the palpi yellow; three postsutural and three sternopleural machrochætæ; abdomen of female bearing a compressed, rounded process thickly beset with short spines on the underside of the second segment, and there is a short fifth segment, both of which are absent in the male; length, 4 to 5 mm. From the type specimen. Massachusetts, Maryland, and District of Columbia. (Loc. cit.) ..... *setosa* Coq.

Genus CELATORIA Coq.

Celatoria Coquillett, Insect Life, Vol. II, p. 235; February, 1890.

Brauer and Bergenstamm, who did not recognize the species upon which this genus is founded, erroneously state that Celatoria is synonymous with Besseria.[1] Some of the principal differences existing between these two genera were pointed out by the writer in an article published in Psyche.[2] A specimen of *Celatoria diabroticæ* submitted to the above-mentioned authors was by them pronounced to belong to a new genus near Neæra. Our two species have three postsutural and three sternopleural macrochætæ:

Palpi yellow, front in both sexes wider than either eye, front pulvilli of male about one-half as long as the last tarsal joint; length, 4 to 6 mm. District of Columbia, College Station, Tex., and Cali-

[1] Zweif. Kais. Mus. Wien, VI, p. 189; 1893.
[2] Vol. VII, p. 251; 1895.

fornia. (Amer. Naturalist, Vol. V, p. 219; 1871: *Melanosphora. Celatoria crawii* Coquillett, Insect Life, Vol. II, p. 235; Feb., 1890. New genus near Neæra, Brauer and Bergenstamm *in litt.*)
diabroticæ Shimer.

Palpi black, front in male two-fifths, in the female two-thirds, as wide as either eye, front pulvilli of male as long as the last tarsal joint; black; frontal bristles descending slightly below the middle of the second antennal joint, cheeks one-seventh as wide as the eye height, facial ridges bristly on the lowest third, antennæ nearly or fully as long as the face, the third joint two and one-fourth times as long as the second, as wide as the latter is long, penultimate joint of arista shorter than broad; thorax nearly destitute of pollen except on the sides, abdomen with a narrow fascia of white pollen on the bases of the last three segments, venter of female thickly studded with short, stout spines on hind part of the second and third segments; front pulvilli of the female nearly one-half as long as the last tarsal joint; wings hyaline, slightly tinged with smoky, calypteres of female white, the hind ones in the male strongly tinged with brown except at the bases; length, 3.5 to 5 mm. Franconia and White Mountains, New Hampshire, and Los Angeles County, Cal. Two males and three females, one male from the latter locality captured by the writer in March, the others taken by Mrs. A. T. Slosson and the late H. K. Morrison. Type No. 3555, U. S. National Museum ..... *spinosa* n. sp.

Genus HYPOSTENA Meig.

Hypostena Meigen, System. Besch. Eur. Zweif. Insekten, Vol. VII, p 239; 1838.
Tachinophyto Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 130; June, 1892.
Pseudomyothyria Townsend, loc. cit., p. 131.

This synonymy is by the writer. Our species have only three postsutural macrochætæ:

1. Third vein bearing less than six bristles at its base ..... 2.
   Third vein bristly almost or quite to the small crossvein, hind crossvein near last third of distance from the small to bend of fourth vein; black, the palpi and apex of proboscis yellow; length, 5 mm. From the type specimen. Canada; Beverly, Mass.; Hartford, Conn.; District of Columbia; North Carolina, and northern Illinois. (Journal N. Y. Ent. Soc., Vol. III, p. 54; June, 1895: *Thryptocera.*) ..... *dunningii* Coq.
2. Apical cell open or closed in the margin of the wing ..... 3.
   Apical cell closed, its petiole at least twice as long as the small crossvein; black, the palpi yellow; length, 5.5 mm. From the type specimen. Avalon, N. J., and southern California. (Journal N. Y. Ent. Soc., Vol. III, p. 55; June, 1895: *Pseudomyothyria.*) ..... *tortricis* Coq.

3. Femora and tibiæ black; three sternopleural macrochætæ, but the lowest one sometimes very small, sternopleural hairs abundant and conspicuous ..... 5.

   Femora and tibiæ yellow, abdomen usually yellow, at least on the sides at base, second and third segments bearing discal macrochætæ ..... 4.

4. With three sternopleural macrochætæ, face in profile concave; black, the base of antennæ, palpi, proboscis, apex of scutellum, coxæ, femora, tibiæ, and sides of first two or three abdominal segments partly or wholly yellow; length, 8 mm. Los Angeles County, Cal. (Insecta Saundersiana, Vol. I, p. 313; 1856: *Dexia. Masicera cucerata* Bigot, Annales Soc. Entomol. France, p. 263; 1888.) ..... *pedestris* Walk.

   With only two sternopleural macrochætæ, face in profile strongly convex; yellow, the apical two-thirds of the arista, upper part of the occiput except in the middle, and the middle of mesonotum black; front in the male two-fifths, in the female three-fourths, as wide as either eye, two pairs of orbital bristles in the female, wanting in the male; frontal bristles descending to tip of second antennal joint; cheeks bare, one-sixth as broad as the eye height; antennæ almost as long as the face, the third joint six times as long as the second, nearly five times as long as broad, arista minutely pubescent, thickened on the basal third; thorax grayish pollinose, marked with four black vittæ, scutellum bearing four pairs of marginal macrochætæ; venter of abdomen destitute of short, stout spines; front pulvilli of male as long, in the female one-half as long, as the last tarsal joint; wings hyaline, veins in the female bordered with yellowish, third vein bearing two or three bristles at the base; length, 7 to 8 mm. Franconia, N. H., and North Carolina. One male and female, the latter collected by Mrs. A. T. Slosson. Type No. 3549, U. S. National Museum ..... *flaveola* n. sp.

   With only two sternopleurals; differs from the female of *flaveola* as follows: Black, the second antennal joint and base of the third, palpi, proboscis, femora, and tibiæ yellow, sides of abdomen basally sometimes also yellow; third joint of antennæ four times as long as the second, nearly four times as long as broad; veins not bordered with yellowish; length, 5 to 5.5 mm. New Bedford, Mass.; Cumberland County, N. J., and Tifton, Ga. Twelve females, collected by Dr. G. deN. Hough, Mr. C. W. Johnson, and Mr. G. R. Pilate ..... *gilvipes* n. sp.

5. Arista thickened on only the basal third ..... 6.

   Arista thickened on the basal three-fourths, third joint of antennæ in the female three times as long as broad, front slightly wider than either eye, face in profile concave, abdomen shining, strongly tinged with bronze, base of second segment narrowly white pollinose, second and third segments destitute of discal macrochætæ,

venter destitute of short, stout spines, claws and pulvilli of female minute, the pulvilli scarcely one fifth as long as the last tarsal joint; palpi and entire insect except the wings and calypteres, black; length, 4 mm. Los Angeles County, Cal. From the type specimen. (Journal N. Y. Ent. Soc., Vol. III, p. 57; June, 1895.) ..... *ænea* Coq.

6. Palpi yellow, scutellum bearing three pairs of long marginal and sometimes a short apical pair of macrochætæ, usually a discal pair on the second and third abdominal segments ..... 7.

Palpi black ..... 8.

7. Third segment of abdomen pollinose on at least the basal two-thirds, the pollen yellowish, abdomen subopaque; length, 4 to 9 mm. Franconia and White Mountains, New Hampshire; Beverly, Mass.; Maryland; District of Columbia; Georgia; Texas; Missouri; northern Illinois; Colorado; and Sonoma County, Cal. From the type specimen. (Journal N. Y. Ent. Soc., Vol. III, p. 57; June, 1895. *Anisia nigrocincta?* v.d.W., Brauer and Bergenstamm *in litt.*) ..... *variabilis* Coq.

Third segment at most pollinose on the basal third, the pollen white, abdomen subshining; length, 4 to 9 mm. White Mountains, New Hampshire; northern Illinois; District of Columbia; Virginia; North Carolina; Tifton, Ga.; Ocean Springs, Miss.; Florida and Jamaica, West Indies. (Trans. Amer. Ent. Soc., Vol. XIX, p. 131; June, 1892: *Tachinophyto. Pseudomyothyria indecisa* Townsend, loc. cit., p. 132. *Vibrissina* sp., Brauer and Bergenstamm *in litt.*) ..... *floridensis* Town.

8. Second and third segments of abdomen destitute of discal macrochætæ, gray pollinose on bases of last three segments, third joint of antennæ nearly three times as long as the second ... 10.

Second and third segments bearing discal as well as marginal macrochætæ, scutellum bearing three pairs of long marginal macrochætæ and sometimes a very short apical pair ..... 9.

9. Abdomen gray pollinose on bases of last three segments, front in the male three-fifths, in the female from three-fifths to three-fourths, as wide as either eye; calypteres white, sometimes tinged with yellow on the margin; length, 4 to 6 mm. White Mountains and Franconia, N. H.; Beverly and New Bedford, Mass.; District of Columbia; Georgia; Illinois; Tucson, Ariz.; Palm Springs and Los Angeles Co., Cal., and Allende, Mexico. From the type specimens. (Journal N. Y. Ent. Soc., Vol. III, p. 57; June, 1895. *Hypostena pusilla*[1] Coquillett, loc. cit., p 58.) ..... *barbata* Coq.

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[1]This is the female of *barbata;* in the description of the latter, through an error in the printing, the male sign (♂) was used in the place of the female (♀), and *vice versa*. The two females from California under *barbata* do not have discal macrochætæ on the second and third segments of the abdomen, as erroneously stated in the description; they belong to *vanderwulpi* Town.

Abdomen wholly shining and destitute of pollen; front in male three-fifths as wide as either eye; wholly black, no orbital bristles in male, frontals descending below the arista, facial ridges bristly to the lowest frontal bristles, antennæ as long as face, the third joint six times as long as the second, arista thickened on the basal two-fifths; thorax shining, a whitish pollinose vitta in the middle in front of the suture, lateral edges also whitish pollinose; wings hyaline, two bristles at base of third vein, calypteres whitish; length, 4 mm. Biscayne Bay, Florida. A single male specimen collected by Mrs. A. T. Slosson ... *nitens* n. sp.

10. Front of female only two-thirds as wide as either eye, facial ridges bare, scutellum bearing only two pairs of long marginal macrochætæ, third joint of antennæ three times as long as wide; length, 3.5 mm. St. Augustine, Fla. (Proceedings Acad. Nat. Sci. Phila., p. 313; Sept., 1895.) ..... *maculosa* Coq.

Front of female almost as wide as either eye, facial ridges bristly on the lower half, scutellum bearing three pairs of long marginal macrochætæ; basal three-fifths of the last three segments of abdomen, except a dorsal vitta on the first two, gray pollinose; length, 5 mm. Los Angeles County, Cal. (Entom. News, Vol. III, p. 131; June, 1892: *Myothyria.*) ..... *vanderwulpi* Town.

Genus **DIDYMA** v. d. W.

Didyma van der Wulp, Biologia Cent.-Amer., Diptera, Vol. II, p. 156; June, 1890.

Our species are black, with at most the palpi and sides of the abdomen partly yellow, hind tibiæ on the outer side ciliate with short bristles:

1. Second, or at least the third, abdominal segment bearing discal macrochætæ ..... 2.

Second and third, abdominal segments destitute of discal macrochætæ, palpi yellow, hind crossvein slightly curved, nearer to the bend of the fourth vein than to the small crossvein; length, 6 mm. Lake Worth, Fla. (Biol. Cent.-Amer., Dipt., Vol. II, p. 163; June, 1890.) ..... *inconspicua* v. d. W.

2. Hind crossvein curved S-shape, nearer to the bend of the fourth vein than to the small crossvein, palpi yellow; length, 4.5 mm. Kirkwood, Mo. (Biol. Cent.-Amer., Dipt., Vol. II, p. 160; June, 1890.) ..... *exigua* v. d. W.

Hind crossvein almost straight, midway between the small and the bend, palpi black; length, 5 mm. District of Columbia. (Biol. Cent.-Amer., Dipt., Vol. II, p. 161; June, 1890.) .. *timida* v. d. W.

Genus MACQUARTIA Desv.

Macquartia Desvoidy, Essai sur les Myodaires, p. 204; 1830.
Amedea Desvoidy, loc. cit., p. 207.
Albinia Desvoidy, loc. cit., p. 209.
Aporia Macquart, Diptères Exotiques, Supp. I, p. 168; 1846. (*Non* Huebner; 1816.)

This synonymy, with the exception of the last one, is given by Schiner;[1] the name of Aporia having previously been employed in the Lepidoptera, the species heretofore placed in this genus may with propriety be placed in Macquartia, to which genus our species has been referred by Brauer and Bergenstamm *in litt.* Our single species is black, the base of the antennæ, palpi, and apex of proboscis, yellow; three postsutural and two sternopleural macrochætæ; length, 8 to 10 mm. Mount Washington, N. H.; New Bedford, Mass.; District of Columbia; Aurora Mills, Oreg., and Siskiyou County, Cal. (List of Dipterous Insects, Part IV, p. 841; 1849: *Dexia. Aporia limacodis* Townsend, Psyche, Vol. VI, p. 275; June, 1892. *Macquartia* sp., Brauer and Bergenstamm *in litt.*) ..... *pristis* Walk.

Genus HYALURGUS Br. and Berg.

Hyalurgus Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, VI, p. 136; 1893.

Our species is black, the base of antennæ, palpi, apex of proboscis, scutellum, tibiæ, and tarsi, yellow; three postsutural and three sternopleural macrochætæ, last three segments of abdomen bearing discal and marginal macrochætæ, middle tibiæ each bearing three macrochætæ on the front side near the middle; length, 7 mm. Illinois. (Can. Entomologist, Vol. XXIV, p. 81; April, 1892: *Macquartia.*) . . *johnsoni* Town.

Genus POLIDEA Macq.

Harrisia Meigen, System. Besch. Eur. Zweif. Insekten, Vol. VII, p. 260; 1838. (*Non* Desvoidy; 1830.)
Polidea Macquart, Annales Soc. Ent. France, p. 92; 1848.
Somoleja Rondani, Atti Soc. Italiana Sci. Nat., Vol. VIII, p. 35; 1865.

Polidea was proposed for the genus Harrisia of Meigen, the latter name having been previously used in the Diptera. According to Brauer and Bergenstamm, Harrisia of Meigen is identical with Somoleja of Rondani.[2] Our single species has the body and sides of the front shining black, with a tinge of bronze, almost destitute of pollen; three postsutural and three sternopleural macrochætæ, last three segments of abdomen bearing discal ones, third vein bristly at least halfway from base to small crossvein, middle tibiæ each bearing two or more macrochætæ on the front side near the middle; length, 5 to 7 mm. Georgetown, Canada; White Mountains and Franconia, N. H.; New Bedford, Mass.;

[1] Fauna Austriaca, Vol. I, p. 528; 1862.
[2] Zweif. Kais. Mus. Wien, VI, p. 231; 1893.

South Windsor, Conn.; Constantine, Mich.; Northern Illinois, and Los Angeles County, Cal. (List of Dipterous Insects, Part IV, p. 766; 1849: *Tachina*. *Tryphera americana* Townsend, Can. Entomologist, Vol. XXIV, p. 78; April, 1892. *Tryphera polidoides* Townsend, loc. cit., p. 79. *Polidea americana* Townsend, loc. cit., p. 82: from a cotype specimen. *Somoleja* sp., Brauer and Bergenstamm *in litt.*) *areos* Walk.

Genus HYPOCHÆTA Br. and Berg.

Hypochæta Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 93; 1889.

The type species is black, the first two antennal joints, palpi, apex of proboscis, and the tibiæ, yellowish; three postsutural and two sternopleural macrochætæ; length, 5 mm. White Mountains, N. H. (Fauna Austriaca, Vol. I, p. 527; 1862: *Frivaldskia.*) ..... *longicornis*[1] Schiner.

Genus PELATACHINA Meade.

Hyria Desvoidy, Histoire Naturelle Diptères, p. 1100; 1863. (*Non* Lamarck, 1819; *non* Stephens, 1829.)

Pelatachina Meade, Entomologists' Monthly Magazine, Vol. XXX, p. 109; 1894.

The above name was proposed for the genus Hyria of Desvoidy, the latter name having been previously used in the Mollusca and also in the Lepidoptera. Our single species is black, including the palpi; front of female as wide as either eye, two pairs of orbital bristles, and behind the posterior pair a pair of outwardly curving macrochætæ slightly in front of the lowest ocellus; frontal bristles descending to basal fourth of the second joint of the antennæ, face golden yellow pollinose, cheeks nearly one-third as broad as the eye-height, vibrissæ on a level with front edge of oral margin, ridges bristly on the lowest fourth, antennæ nearly as long as the face, the third joint one and one-half times as long as the second, arista thickened on the basal two-fifths, the penultimate joint broader than long; thorax gray pollinose, marked with three black vittæ, three postsutural and three sternopleural macrochætæ, scutellum bearing three long marginal pairs, abdomen gray pollinose and with darker reflecting spots, hairs depressed, first segment bearing a marginal pair of macrochætæ, second with two discal and a marginal pair, third with three discal pairs and a marginal row; middle tibiæ each bearing three or more on the front side near the middle; wings hyaline, third vein bearing two bristles near the base, fourth vein beyond the bend arcuate; calypteres white, narrowly margined with brown; length, 9 mm. No locality, but evidently from the United States. A single female specimen. Type No. 3546, U. S. National Museum. (*Hyria* sp., Brauer and Bergenstamm *in litt.*) .... *pellucida* n. sp.

[1] This species is referred by Schiner to the *Tachina longicornis* of Fallen, but judging from the description the two species are very distinct, a conclusion already reached by Brauer and Bergenstamm.

Genus RACODINEURA Rond.

Roeselia Desvoidy, Essai sur les Myodaires, p. 145; 1830. (*Non* Huebner, 1816.)
Racodineura Rondani, Dipterologiæ Italicæ Prodromus, Vol. IV, p. 31; 1861.

The latter term was proposed by Rondani to take the place of Roeselia, which had previously been used in the Lepidoptera. Our single species is black, the antennæ, lower part of face, palpi, femora, and tibiæ yellow; front of female slightly over twice as wide as either eye, two pairs of orbital bristles, frontal bristles descending to tip of second antennal joint; sides of face at narrowest point each almost one-half as wide as the median depression, thinly bristly one-fifth of distance from lowest frontal to the vibrissæ, the latter on a level with front edge of oral margin; ridges bristly on the lower half, but the uppermost bristles very short; cheeks slightly over one-half as broad as the eye height; antennæ almost as long as the face, the third joint five times as long as the second, arista thickened to the middle, the penultimate joint broader than long; thorax gray pollinose, marked with four black vittæ, four postsutural and three sternopleural macrochætæ; scutellum bearing four long marginal pairs; abdomen opaque gray pollinose, first three segments bearing marginal macrochætæ, middle tibiæ each bearing three or more on the front side near the middle; wings hyaline, the base grayish, third vein bearing a single bristle near the base, hind crossvein nearly straight, midway between the small and the bend of the fourth; calypteres white; length, 9 mm. Tifton, Ga. A female specimen collected October 1, 1896, by Mr. G. R. Pilate. Type No. 3545, U. S. National Museum ..... *americana* n. sp.

Genus ERVIA Desv.

Ervia Desvoidy, Essai sur les Myodaires, p. 225; 1830.

Our single species is black, the face and more or less of the antennæ, femora, and tibiæ, also the greater portion of the sides of the first three segments of the abdomen in the male, yellow; three postsutural and three sternopleural macrochætæ; length, 7 to 10 mm. Agricultural College, Miss., and Lufkin, Tex. (Encyclopédie Méthodique, Vol. VIII, p. 423; 1811: *Ocyptera.*) ..... *triquetra* Oliv.

Genus LESKIA Desv.

Leskia Desvoidy, Essai sur les Myodaires, p. 100; 1830.
Myobia Desvoidy, loc. cit., p. 98. (*Non* Heyden; 1826.)
Solieria Desvoidy, Annales Soc. Ent. France, p. 461; 1848.
Orillia Desvoidy, loc. cit., p. 474.
Anthoica Rondani, Dipterologiæ Italicæ Prodromus, Vol. IV, p. 8; 1861.
Pyrrosia Rondani, loc. cit., p. 48.

Rondani proposed the name Anthoica for Myobia, which is preoccupied in the Arachnida, and erected the genus Pyrrosia to include Leskia, Solieria, and Orillia. Brauer and Bergenstamm place Leskia and

Myobia as subgenera of Pyrrosia,[1] but make no mention of the other three names. Our species have yellow legs; three postsutural and three sternopleural macrochætæ:

Scutellum largely or wholly black; abdomen yellow, in the male marked with a dorsal vitta and usually the base of the fourth segment, in the female with a dorsal vitta on the first two segments, black; length, 6 mm. Bucks and Delaware counties, Pa. (Journal N. Y. Ent. Soc., Vol. III, p. 105; Sept., 1895: *Myiobia.*) ..... *thecata* Coq.

Scutellum and abdomen yellow, last two or three segments of the latter sometimes marked with a dorsal spot of brown or black; length, 7 to 11 mm. Andover, Mass.; Ithaca, N.Y.; Jacksonville, Fla., and Onaga, Kans. (Journal Acad. Nat. Sciences Phila., Vol. VI., p. 177; 1829: *Dexia. Myiobia depile* Coquillett, Proc. Acad. Nat. Sciences Phila., p. 313; Sept., 1895.) .... *analis* Say.

Genus LESKIOMIMA Br. and Berg.

Leskiomima Brauer and Bergenstamm, Zweif. Kais. Mus. Wien. V, p. 372; 1891.

The type species is yellow, the upper part of the occiput, dorsum of thorax, tarsi, and usually a few spots on the abdomen, black; usually three postsutural and three sternopleural macrochætæ; length, 6 to 8 mm. White Mountains and Franconia, N. H.; New York, N. Y.; Chester County, Pa.; Virginia; North Carolina, and Lake Worth, Florida. (Ausser. Zweif. Insekten, Vol. II, p. 251; 1830: *Stomoxys. Leskiomima tenera* Wied., Brauer and Bergenstamm *in litt.*) ..... *tenera* Wied.

Genus APINOPS, new genus.

The characters of this new genus may be gleaned from the following description of the type species: Black; head at vibrissæ slightly longer than at base of antennæ; front, including the vitta, gray pollinose, in the male about one-half, in the female two-thirds, as wide as either eye; ocellar bristles directed forward, frontal bristles descending nearly to middle of second antennal joint; three pairs of orbital bristles in the female, wanting in the male; antennæ six-sevenths as long as the face, third joint one and one-half times as long as the second, rounded at the tip, arista bare, thickened to the middle, the penultimate joint slightly longer than broad; sides of face bare, each at narrowest part scarcely one-tenth as wide as the median depression; vibrissæ strong, situated on a line with front edge of oral margin, two or three bristles above each; cheeks one-seventh as wide as the eye height; proboscis slender, rigid, the portion beyond the basal articulation one and one sixth times as long as height of head, labella not developed; palpi minute, scarcely longer than broad, tipped with a short bristle; thorax grayish pollinose, marked with four black

[1] Zweif. Kais. Mus. Wien, VI, p. 140; 1893.

vittæ; three postsutural and two sternopleural macrochætæ; scutellum bearing three pairs of long marginal macrochætæ; abdomen shining, a pair of marginal macrochætæ on the first and second segments and a marginal row on the third; genitalia projecting at least twice the length of the fourth abdominal segment beyond the latter, curved beneath the abdomen; first segment of abdomen in the female greatly dilated ventrally; hind tibiæ not ciliate with bristles; front pulvilli in female one-half as long as, in the male about as long as, the last tarsal joint; wings hyaline, a single bristle at base of the third vein, other veins bare, apical cell open at the extreme tip of wing, bend of fourth vein arcuate, hind crossvein nearly perpendicular, midway between the small crossvein and bend of the fourth vein; calypteres white; length, 4 to 5 mm. Southern Illinois. Two males and one female collected by Charles Robertson. Type No. 3559, U. S. National Museum. . *atra* n. sp.

Genus LEUCOSTOMA Meig.

Leucostoma Meigen, in Illiger's Magazin für Insektenkunde, Vol. II, p. 279; 1803.
Clelia Desvoidy, Essai sur les Myodaires, p. 255; 1830.
Psalida Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 76; 1856.

This synonymy is given by Schiner[1] and repeated by Brauer and Bergenstamm.[2] Our species are black, the palpi sometimes yellow; three sternopleural and usually three postsutural macrochætæ:

1. Thorax shining, almost destitute of pollen, frontal vitta at the lowest ocellus narrower than either side of the front at the same point, scutellum bearing three pairs of marginal macrochætæ, first two segments of abdomen each bearing a marginal pair, palpi yellow ..... 2.

Thorax opaque, densely gray pollinose, frontal vitta of female at the lowest ocellus twice as wide as either side of the front, palpi black; front of female one and one-third times as wide as either eye, two pairs of orbital bristles, cheeks one-sixth as wide as the eye-height, antennæ two thirds as long as the face, the third joint as long as the second, arista thickened on the basal three-fifths, the penultimate joint shorter than broad; thorax not distinctly vittate, scutellum densely gray pollinose, bearing two pairs of long marginal macrochætæ, abdomen shining, basal half of the last three segments gray pollinose, first two segments destitute of macrochætæ, those of the other two segments very short, genitalia of female claw-like, curved beneath the body; wings hyaline, third vein bearing two or three bristles near the base, hind crossvein straight, one and one-third times as long as the last section of the third vein, situated midway between the small crossvein and the bend; calypteres white; length, 5 mm. Clementon, N. J. A single female specimen collected

[1] Fauna Austriaca, Vol. I, p. 542; 1862.
[2] Zweif. Kais. Mus. Wien, VI, Index; 1893.

May 30, 1895, by Mr. C. W. Johnson. Type No. 3563, U. S. National Museum..... *subopaca* n. sp.

2. Abdomen entirely destitute of pollen; length, 4 to 5 mm. White Mountains, New Hampshire; Massachusetts, and northern Illinois. (Trans. Amer. Ent. Soc., Vol. XVIII, p. 380; December, 1891.)..... *atra* Town.

Abdomen grayish pollinose on the bases of the last three segments; length, 4.5 to 7 mm. Maryland; Tifton, Ga.; Las Cruces, N. Mex.; Canon City, Colo., and Washington. (Can. Entomologist, Vol. XXIV, p. 81; April, 1892: *Phyto. Leucostoma neomexicana* Townsend, loc. cit., p. 169; July. *Phyto nigricornis* Townsend, loc. cit., p. 170; from a cotype specimen.)..... *senilis* Town.

Genus SCIASMA, new genus.

The characters of this genus may be gleaned from the table of genera given in a previous part of the present work and from the following description of the type species: Black, the antennæ and palpi yellow, the femora sometimes partly or wholly yellow; front of male from as wide to twice as wide, in the female six times as wide, as width of lowest ocellus, bare except the frontal bristles which descend to base of second antennal joint, ocellar bristles wanting, two pairs of orbital bristles in the female, wanting in the male; cheeks one-tenth as wide as the eye-height, sides of face bare, each scarcely as wide as the lowest ocellus, eyes bare, vibrissæ on a level with front edge of oral margin, two or three bristles above each; head at vibrissæ almost as long as at base of antennæ, antennæ from three-fourths to four-fifths as long as the face, the third joint twice as long as the second, arista bare, thickened on the basal fourth, the penultimate joint shorter than broad; body shining, destitute of pollen; two postsutural and three sternopleural macrochætæ, scutellum bearing two marginal pairs, abdomen of four segments, the first two destitute of dorsal macrochætæ, the third and fourth each with a marginal row, genitalia of male large, curved beneath the third and fourth segments of the abdomen, in the female nearly concealed in the fourth segment; wings hyaline, costal cell brown, a brown spot extending from the hind crossvein to tip of second vein, and from the costa to the fourth or fifth vein; third vein bearing a single bristle at its base, hind crossvein straight, at first third or two-fifths of distance from the small to bend of fourth, the latter arcuate and destitute of an appendage, apical cell closed, third vein ending at the extreme wingtip, its last section as long as the hind crossvein; calypteres white except apical half of hind ones, which is black; hind tibiæ not ciliate, dilated in the male, front pulvilli in both sexes almost as long as the last tarsal joint; length, 3 to 4 mm. New Bedford, Mass.; Jamesburg, N. J., and Tifton, Ga. Twenty-six males and one female, collected by Dr. Garry deN. Hough, Mr. C. W. Johnson, and Mr. G. R. Pilate. Type No. 3564, U. S. National Museum..... *nebulosa* n. sp.

Genus HYALOMYODES Town.

Hyalomyodes Townsend, Psyche, Vol. VI, p. 429; April, 1893.

Our single species is black, the palpi yellow; eyes of male almost contiguous, but in the female separated at least one and one-half times the width of the lowest ocellus; abdomen on last three segments gray pollinose, the second and third segments in the female each bearing a pair of large triangular black spots, indistinct or wanting in the male; front pulvilli of female less than two-thirds as long as the last tarsal joint; length, 4 to 5 mm. White Mountains, N. H.; New Bedford, Mass.; Maryland; Tifton, Ga., and Colorado. (Dipt. Amer. Sept. Indig., Centuria IV, No. 85; 1863: *Hyalomyia. Hyalomyodes weedii* Townsend, Psyche, Vol. VI, p. 430; April, 1893.)...*trianguliferа* Loew.

Genus ŒSTROPHASIA Br. and Berg.

Œstrophasia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 145; 1889.
Phasiopteryx Brauer and Bergenstamm, loc. cit., p. 146.
Neoptera van der Wulp, Biol. Cent.-Amer., Diptera, Vol. II, p. 165; June, 1890.
Cenosoma van der Wulp, loc. cit., p. 166.
Euœstrophasia Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 133; June, 1892.

The synonymy of the last two with Œstrophasia, and of Neoptera with Phasiopteryx, has already been given by Brauer and Bergenstamm.[1] Phasiopteryx is not sufficiently distinct from Œstrophasia to be retained as a distinct genus. Our species have three postsutural and two sternopleural macrochætæ:

1. Wings destitute of brown markings..... 3.
   Wings distinctly marked with brown..... 2.
2. Discal cell crossed by a brown crossband, hind crossvein not wholly bordered with brown, a brown border to the fifth vein and a brown crossband beyond the discal cell; yellow, an ocellar dot and usually from one to three spots or a fascia on hind margin of each segment of the abdomen, and sometimes one or more on the thorax, black; length, 4 to 5 mm. Toronto, Canada; Franconia, N. H.; Philadelphia, Pa., and Florida. (Biol. Cent.-Amer., Diptera, Vol. II, p. 167; June, 1890: *Cenosoma.*)..*signifera* v. d. W.
   Discal cell not crossed by a brown crossband, hind crossvein bordered with brown, second basal and anal cells, and wing in front of third vein from humeral to slightly beyond small crossvein, also a brown crossband extending over the hind crossvein and bordering the fifth vein except near base of discal cell, brown; yellow, the upper part of the occiput sometimes blackish, thorax sometimes black dorsally, or with two vittæ and an anterior spot black; abdomen with the hind margin of each segment

[1] Zweif. Kais. Mus. Wien, VI, pp. 218 and 234; 1893.

black and sometimes with a black dorsal vitta; length, 5.5 mm. Tewksbury, Mass., and Veta Pass, Colorado. (Zweif. Kais. Mus. Wien, IV, p. 145; 1889: also *in litt.*) ..... *clausa* Br. and Berg.

3. Antennæ reaching at least halfway to the oral margin, the tip less than the length of the second joint from the point where the facial ridges approach each other the most closely; submarginal cell in the male scarcely over one-half as wide as the greatest distance from the third vein to the hind margin of the wing, front in the female noticeably widening anteriorly ..... 4.

Antennæ reaching two-fifths of distance from their base to the oral margin, the tip nearly three times the length of the second joint from the point where the facial ridges approach each other the most closely; front in female three-fourths as wide as either eye, its sides parallel. (According to Brauer and Bergenstamm, the submarginal cell in the male is as wide as the greatest distance from the third vein to the hind margin of the wing, and the second vein near its middle and the costa opposite it are greatly swollen.) Length, 8 mm. Texas. (Zweif. Kais. Mus. Wien, IV, p. 147: 1889: *Phasiopteryx.* Also *in litt.*) .. *bilimekii* Br. and Berg.

4. Front in the male nearly one-half, in the female two-thirds, as wide as either eye; second vein in the male with a large swelling near the middle and another on the costa opposite it; submarginal cell almost twice as wide as length of the hind crossvein; length, 5.5 to 7 mm. Charlotte Harbor, Florida. (Journal N. Y. Ent. Soc., Vol. III, p. 52; June, 1895: *Clytiomyia. Phasiopteryx bilimekii* Br. and Berg., Brauer and Bergenstamm *in litt.*) ..... *punctata* Coq.

Front in the male scarcely one-eighth, in the female one and one-third times, as wide as either eye; second vein destitute of a swelling, submarginal cell less than two-thirds as wide as length of hind crossvein; length, 7 to 8 mm. Georgia, Texas, and Colorado. (Annales Soc. Entomol. France, p. 268; 1888: *Pyrrosia.*) ..... *ochracea* Bigot.

Genus CLYTIOMYIA Rond.

Clytia Desvoidy, Essai sur les Myodaires, p. 287; 1830. (*Non* Lamarck, 1812; *non* Huebner, 1816.)

Clytiomya Rondani, Dipterologiæ Italicæ Prodromus, Vol. IV, p. 9; 1861.

The latter term was proposed to take the place of Clytia, which had been used twice previously as a generic name. Our species have three postsutural and two sternopleural macrochætæ:

Legs black, entire insect, except the yellow palpi, black; calypteres white, wings hyaline; length, 7 mm. Washington. (Journal N. Y. Ent. Soc., Vol. III, p. 53; June, 1895.) ..... *atrata* Coq.

Legs yellow; head and its members except the eyes and upper part of the occiput, usually the apex of scutellum, and abdomen

except a dorsal row of spots and the hind edges of the last two segments, yellow: last two segments of abdomen sometimes almost wholly black; length, 5 to 8 mm. White Mountains, New Hampshire, and Agricultural College, Miss. (Trans. Am. Ent. Soc., Vol. XVIII, p. 372; December, 1891: *Clytia. Redtenbacheria* sp., Brauer and Bergenstamm *in litt.*).....*flava* Town.

Genus **EUTRIXA**, new genus.

The principal characters of this genus have been given in the table of genera on previous pages of this work. The type species is black, the lower part of the front, face, antennæ, base of arista, cheeks, proboscis, palpi, femora, and tibiæ, yellowish; apex of antennæ and the proboscis sometimes brown; three postsutural and two sternopleural macrochætæ; apex of antennæ less than the length of the second antennal joint from the point where the facial ridges approach each other the most closely: length, 6 to 8 mm. Franconia, N. H.: Maryland, and District of Columbia. (List of Dipterous Insects, Part IV, p. 753; 1849: *Tachina. Clytiomyia exile* Coquillett, Journal N. Y. Ent. Soc., Vol. III, p. 53; June, 1895.).....*masuria* Walk.

Genus **XANTHOMELANA** v. d. W.

Xanthomelana van der Wulp, Tijd. voor Entomologie, Vol. XXXV, p. 188; 1892.
Xanthomelanodes Townsend, Canadian Entomologist, Vol. XXV, p. 167; July, 1893.

The latter name was proposed for Xanthomelana under the mistaken idea that this name is preoccupied by Xanthomelon: but the two terms do not conflict with each other. Our two species have three postsutural macrochætæ, scutellum bearing two marginal pairs; wings on costal half or less brown, the remainder hyaline or subhyaline:

1. Oral margin bearing black macrochætæ in addition to the vibrissæ, legs black, bases of femora yellow..... 2.

   Oral margin destitute of black macrochætæ besides the vibrissæ, legs yellow, apices of tibiæ and the tarsi black; black, the antennæ, face, cheeks, palpi, abdomen except a spot on each side of first segment at its base and a triangular dorsal spot on posterior part of second and third segments, coxæ, femora, and tibiæ except the apices, yellow; abdomen shining, the fourth segment and sometimes the base of the third thinly yellowish pollinose; wings hyaline, the costal margin to slightly below the third vein smoky brown; posterior calypteres yellow, the bases white; length, 7 mm. Horseneck Beach, Mass. A specimen of each sex collected August 4, 1896, by Dr. Garry deN. Hough. Type No. 3568, U. S. National Museum.....*flavipes* n. sp.

2. Abdomen black, sides of first two segments and usually the front corners of the third, yellowish, front femora almost wholly black, three sternopleural macrochætæ; length, 6 mm. Colorado and southern California. (Jour. Acad. Nat. Sci. Philadelphia, Vol. VI, p. 173; 1829: *Ocyptera*. *Sterenia pictipes* Bigot, Ann. Soc. Ent. France, p. 254; 1888.) ..... *arcuata* Say.

Abdomen wholly yellow, front femora broadly yellow at the base; two sternopleural macrochætæ; length, 6 mm. Northern Virginia. (Jour. Acad. Nat. Sci. Philadelphia, Vol. VI, p. 172; 1829: *Phasia*. *Tachina corythus* Walker, List of Dipterous Insects, Part IV, p. 797; 1849. *Wahlbergia atripennis* Townsend, Proc. Ent. Soc. Washington, Vol. II, p. 145; April 2, 1891.) ..... *atripennis* Say.

Genus HEMYDA Desv.

Hemyda Desvoidy, Essai sur les Myodaires, p. 226; 1830.

Our single species is black, the palpi, humeri, a large spot on each side of the second abdominal segment at the middle, the front corners of the third segment, the coxæ, tibiæ and a large portion of the femora, yellow; three postsutural and one sternopleural macrochætæ, scutellum bearing three marginal pairs; frontal vitta highly polished; length, 11 mm. Northern Illinois. (Loc. cit.) ..... *aurata* Desv.

Genus BESKIA Br. and Berg.

Beskia Brauer and Bergenstamm, Zweif. Kais. Museum Wien, IV, p. 139; 1889.
Ocypterosipha Townsend, Journal N. Y. Ent. Soc., Vol. II, p. 79; June, 1894.

This synonymy has already been published by Dr. Williston.[1] The type species is black, the abdomen yellow, calypteres white, wings smoky, three postsutural and three sternopleural macrochætæ; length, 6 mm. Boykins, Va.; Tifton, Ga.; and Texas. (List of Dipterous Insects, Part IV, p. 796; 1849: *Tachina*. *Beskia cornuta* Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 170; 1889. *Ocypterosipha willistoni* Townsend, Journal N. Y. Ent. Soc., Vol. II, p. 79; June, 1894.) ..... *ælops* Walk.

Genus ISOGLOSSA Coq.

Isoglossa Coquillett, Canadian Entomologist, Vol. XXVII, p. 125; May, 1895.

The type species is black, the palpi, sides of last three abdominal segments except the hind margins of the second and third, and the apex of the abdomen, yellow; three postsutural and three sternopleural macrochætæ; length, 6 mm. From the type specimen. Los Angeles County, Cal. (Loc. cit., p. 126.) ..... *hastata* Coq.

[1] Manual N. Amer. Diptera, p. 149; 1896.

Genus EPIGRIMYIA Town.

Epigrimyia Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 375; December, 1891.
Drepanoglossa Townsend, loc. cit., p. 377.
Siphoclytia Townsend, loc. cit., Vol. XIX, p. 117; May, 1892.
Siphophyto Townsend, loc. cit., p. 127.
Coronimyia Townsend, loc. cit., p. 128; June, 1892.

This synonymy is original with the writer, and, in the case of Drepanoglossa, is based upon cotypes received from Mr. Townsend. The open or closed apical cell is not a character of generic importance; in a given species, some specimens have it open while in others it is closed. All of our species have on the fourth segment of the abdomen only a submarginal row of macrochætæ:

1. Femora yellow, three postsutural and three sternopleural macrochætæ ..... 2.
   Femora and tibiæ black ..... 4.
2. Scutellum yellow ..... 3.
   Scutellum and proboscis black, the latter beyond the basal articulation one and one-third times as long as height of head, fourth segment of abdomen reddish yellow, sides of first two segments usually yellow; length, 4 to 7 mm. Tifton, Ga. (Trans. Amer. Ent. Soc., Vol. XIX, p. 117; May, 1892: *Siphoclytia.*)
   robertsonii Town.
3. Arista thickened on at least the basal two-fifths, proboscis beyond the basal articulation twice as long as height of head, three times as long as the palpi; length, 6 mm. From two cotype specimens. Las Cruces, N. Mex. (Trans. Amer. Ent. Soc., Vol. XVIII, p. 378; December, 1891: *Drepanoglossa.*) ..... *lucens* Town.
   Arista thickened on the basal fourth, proboscis one and one-half times as long as height of head, twice as long as the palpi; length, 8 mm. Southern California. From the type specimen. (Canadian Entomologist, Vol. XXVII, p. 126; May, 1895: *Drepanoglossa.*) ..... *occidentalis* Coq.
4. Abdomen not pollinose on broad apex of each segment ..... 5.
   Abdomen wholly pollinose, three postsutural and three sternopleural macrochætæ, proboscis beyond the basal articulation one and one-half times as long as height of head, palpi yellow; length, 5 mm. From the type specimen. California. (Canadian Entomologist, Vol. XXVII, p. 128; May, 1895: *Siphophyto.*) ..... *opaca* Coq.
5. Palpi yellow ..... 6.
   Palpi black, three postsutural and three sternopleural macrochætæ, proboscis one and three-fourths times as long as height of head; length, 5 mm. White Mountains, New Hampshire; Woodbury, N. J.; Suffolk, Va., and Tifton, Ga. (Trans. Amer. Ent. Soc., Vol. XVIII, p. 376; December, 1891.) ..... *polita* Town.

6. Proboscis at most one and one-half times as long as height of head, three postsutural and four sternopleural macrochætæ, second and third segments of abdomen shining except on base of each ..... 7.

Proboscis three times as long as height of head, four postsutural and four sternopleural macrochætæ, second and third segments of abdomen each marked with two shining black, triangular spots; length, 5 mm. Maryland. (Trans. Amer. Ent. Soc., Vol. XIX, p. 129: June, 1892: *Coronimyia.*) ..... *geniculata* Town.

7. Third joint of antennæ strongly concave on the front edge; length, 5 mm. White Mountains, New Hampshire: District of Columbia; Virginia, and Southern Illinois. (Trans. Amer. Ent. Soc., Vol. XIX, p. 128; May, 1892: *Siphophyto. Siphophyto neomexicanus* Townsend, l. c. *Gymnoparcia americana* Br. and Berg. MSS., Brauer and Bergenstamm *in litt.*) ..... *floridensis* Town.

Third joint of antennæ strongly convex on the front edge; length, 4 mm. Southern California. (Canadian Entomologist, Vol. XXVII, p. 127; May, 1895: *Siphophyto.*) ..... *setigera* Coq.

Genus SIPHONA Meig.

Siphona Meigen, in Illiger's Magazin für Insektenkunde, Vol. II, p. 281; 1803.
Bucentes Latreille, Genera Crust. et Insectorum, Vol. IV, p. 339; 1809.

This synonymy is given by St. Fargeau and Serville,[1] and repeated by most later authors. Our species have three postsutural and three sternopleural macrochætæ, third vein bristly at least halfway to the small crossvein, two pairs of orbital bristles in both sexes, palpi and greater part of femora and tibiæ yellow:

1. Terminal section of proboscis laterally compressed and widened, at most three-fourths as long as height of head ..... 2.

Terminal section bristle-like, at least as long as height of head; abdomen opaque gray pollinose, black, the sides of the first two or three segments sometimes partly or wholly yellow; length, 3 to 6 mm. Toronto, Canada; White Mountains and Franconia, N. H.; Beverly, Mass.; District of Columbia; North Carolina; northern Illinois; Colorado; England, and Austria. Two males and one female from Austria received from Brauer and Bergenstamm, and by them labeled *Siphona geniculata* Meig.; also three females from England, received from E. Brunetti, and by him labeled *Siphona geniculata.* (Memoires servir Histoire Insectes, Vol. VI, p. 20: 1776: *Musca.* The following synonymy is by St. Fargeau and Serville, in Encycl. Méthodique, Vol. X, p. 501; 1828: *Stomoxys minuta* Fabricius, Systema Antliatorum, p. 282; 1805. The following is by Meigen, in Syst. Besch. Eur. Zweif. In., Vol. IV, p. 154, 1824, and repeated by most later authors: *Bucentes cinereus* Latreille, Gen. Crus. Insect., Vol. IV, p. 339; 1809. The

[1] Encyclopédie Méthodique, Vol. X, p. 500; 1828.

following is by Macquart, in Annales Soc. Entomol. France, p. 294; 1845: *Siphona cinerea*[1] Meigen, System. Besch. Eur. Zweif. Ins., Vol. IV, p. 156; 1824. The following is by Rondani in Dipt. Italicæ Prod., Vol. III, p. 10, 1859, and is repeated by Schiner: *Siphona nigrovittata* and *analis* Meigen, System. Besch. Eur. Zweif. Insekten, Vol. IV, p. 157; 1824. *Syphona persilla* Desvoidy, Essai sur les Myod., p. 92; 1830. *Syphona tristis* Desvoidy, Annales Soc. Entomol. France, p. 203; 1850. *Syphona fuscicornis* and *consimilis* Desvoidy, loc. cit., p. 205. The following is by the writer: *Siphona illinoiensis* Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 368; December, 1891. *Siphona* sp., Brauer and Bergenstamm *in litt.*)..*geniculata* DeG.

2. Abdomen opaque gray pollinose, black, the sides of the first two segments sometimes partly or wholly yellow, terminal joint of the proboscis at least two-thirds as long as height of head; length, 3 to 4.5 mm. From the type specimen. Southern California. (Canadian Entomologist, Vol. XXVII, p. 125; May, 1895. *Siphona* sp., Brauer and Bergenstamm *in litt.*).....*plusiæ* Coq.

Abdomen shining, destitute of pollen, yellow, a dorsal vitta and hind margins of last three segments black; insect elsewhere black, the face, palpi, apex of scutellum, coxæ, femora and tibiæ yellow, apices of femora brown, frontal vitta brownish yellow, antennæ and proboscis yellowish brown, the base and apex of the latter more yellow; terminal joint of proboscis one-half as long as height of head, thorax gray pollinose, not distinctly vittate, scutellum bearing three long marginal pairs and a short apical pair of macrochætæ, last three segments of abdomen bearing only marginal ones; wings hyaline, calypteres whitish; length, 4 mm. Kirkwood, Mo. Three female specimens from Miss M. E. Murtfeldt. Type No. 3574, U. S. National Museum.....*brevirostris* n. sp.

Genus HETEROPTERINA Macq.

Heteropterina Macquart, Annales Soc. Ent. France, p. 426; 1854.

Our species is black, the palpi and usually the base of the antennæ, sides of first three segments of the abdomen, femora, and tibiæ yellow; last three segments of abdomen each marked with a transverse row of five black spots, two of which are on the lateral margins; three postsutural and two sternopleural macrochætæ, scutellum bearing three marginal pairs; length, 3.5 to 5 mm. From the type specimen. Northern Illinois; Colorado, and Los Angeles County, Cal. (Entomological News, Vol. VI, p. 207; April, 1895.).....*nasoni* Coq.

[1] On page 501 of the Encyclopédie Méthodique, Vol. X, 1828, St. Fargeau and Serville propose the name of *Meigeni* for *cinerea* Meigen, which had been previously used in this genus by Latreille, and this name must therefore also be added to the synonymy.

Genus PLAGIPROSPHERYSA Town.

Plagiprospherysa Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 113; May, 1892.

Our species is black, the first two joints of the antennæ, palpi, apex of scutellum and sometimes the front corners of the second and third segments of the abdomen, yellow; three postsutural and three sternopleural macrochætæ, two on the front side of each middle tibia near its middle; length, 6 to 9 mm. Georgia; Organ Mountains and Las Cruces, N. Mex., Colorado, Tenino, Wash., and southern California. (Biol. Cent.-Amer., Diptera, Vol. II, p. 124; May, 1890: *Prospherysa*. *Plagiprospherysa valida* Townsend, Trans. Amer. Ent Soc., Vol. XIX, p. 113; May, 1892. *Plagiprospherysa floridensis* Townsend, loc. cit., p. 114.) ..... *parvipalpis* v. d. W.

Genus METAPLAGIA Coq.

Metaplagia Coquillett, Journal N. Y. Ent. Soc., Vol. III, p. 102; September, 1895.

Our species is black, the first two joints of the antennæ and the palpi, yellow; three postsutural and three sternopleural macrochætæ; length, 7 mm. From the type specimen. San Diego County, Cal. (Loc. cit., p. 103.) ..... *occidentalis* Coq.

Genus PARAPLAGIA Br. and Berg.

Paraplagia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 354; 1891.

Our two species are black, the first two joints of the antennæ and palpi yellow; three postsutural and three sternopleural macrochætæ:

Third joint of antennæ at most one and one-half times as long as the second, third vein bristly almost to tip of discal cell, first segment of abdomen destitute of macrochætæ; length, 6 to 8 mm. District of Columbia; northern Illinois, and Colorado. (Annales Soc. Entomol. France, p. 262; 1888: *Heteropterina*. *Paraplagia cinerea* Coquillett, Journal N. Y. Ent. Soc., Vol. III, p. 101; September, 1895.) ..... *spinosula* Bigot.

Third joint of antennæ three times as long as the second, third vein not bristly to the small crossvein, first segment of abdomen bearing a pair of long macrochætæ; front of female one and one-fifth times as wide as either eye, three pairs of orbital bristles, the median pair small, frontal bristles descending to tip of second antennal joint, sides of face wholly covered with short hairs and each bearing a row of about six macrochætæ, cheeks nearly one-half as broad as the eye height, arista thickened on the basal two-thirds, the penultimate joint one and one-half times as long as broad; thorax thinly gray pollinose, marked with four black vittæ; abdomen white pollinose on bases of last three segments, these bearing discal and marginal macrochætæ; wings hyaline,

calypteres white; length 8 mm. Missouri. A single female specimen bred from an unknown Lepidopterous larva on Triosteum. Type No. 3578, U. S. National Museum.... *erucicola* n. sp.

Genus CYRTOPHLŒBA Rond.

Cyrtophlœba Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 68; 1856.

Our single species is black, with a strong tinge of bronze, the palpi and first two joints of the antennæ yellowish, three postsutural and three sternopleural macrochætæ, second and third abdominal segments bearing discal and marginal ones; length, 7 to 10 mm. Toronto, Canada; New Bedford and Hyde Park, Mass.; Ithaca, N. Y., and northern Illinois. (Journal N. Y. Ent. Soc., Vol. III, p. 101; September, 1895.) ..... *horrida*[1] Coq.

Genus PLAGIA Meig.

Plagia Meigen, System. Besch. Eur. Zweif. Insekten, Vol. VII, p. 201; 1838

Our species has three postsutural and three sternopleural macrochætæ, proboscis thick, fleshly, less than twice as long as thick, basal half of palpi and the antennæ black, lowest frontal bristles directed downward, third vein at most bristly slightly beyond the small crossvein; length, 7 to 9 mm. Northern Illinois; St. Louis, Mo.; Los Angeles County, Cal.; Allende and Diaz, Mexico. (Biol. Cent.-Amer., Diptera, Vol. II, p. 102; March, 1890. *Plagia aurifrons* Townsend, Canadian Entomologist, Vol. XXIV, p. 67; March, 1892.).... *americana* v. d. W.

Genus SIPHOPLAGIA Town.

Siphoplagia Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 349; November, 1891.

Our species are black, the first two joints of antennæ, lower part of face, cheeks, and palpi, yellow; body subopaque gray pollinose, thorax marked with four black vittæ; three postsutural and three sternopleural macrochætæ, middle tibiæ each bearing four on the front side near the middle, second and third segments of abdomen bearing only marginal macrochætæ; length, 8 mm.:

Fifth vein bare, middle pair of orbital bristles very small. Los Angeles County, Cal. (Trans. Amer. Ent. Soc., Vol. XVIII, p. 350; November, 1891.) ..... *anomala* Town.

Fifth vein bristly, middle pair of orbital bristles as large as the others. Toronto, Canada, and Colorado. (Biol. Cent.-Amer., Diptera, Vol. II, p 102; March, 1890: *Plagia.*) ..... *rigidirostris* v. d. W.

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[1] The *Cyrtophlœba horrida* Giglio-Tos, Boll. Mus. Zool. Torino, Italy, Vol. VIII, p. 6, 1893, does not belong to this genus, since the hind crossvein is nearly perpendicular, the first vein bristly, etc.

Genus DISTICHONA v. d. W.

Distichona van der Wulp, Biologia Cent.-Amer., Diptera, Vol. II, p. 11; Jan., 1890.
Pseudogermaria Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 352; 1891.
Olenochæta Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 114; May, 1892.

This synonymy is original with the writer. Our two species have four postsutural and four sternopleural macrochætæ, palpi yellow:

Apical cell open; scutellum largely, sides and fourth segment of the abdomen, also the femora and tibiæ, yellow; length, 8 mm. Georgia. (Zweif. Kais. Mus. Wien, V, p. 352; 1891: *Pseudogermaria.*) ..... *georgiæ* Br. and Berg.

Apical cell short petiolate; scutellum, abdomen and legs, black; length, 5 to 8 mm. District of Columbia; Tifton, Ga.; Agricultural College, Miss.; San Diego and Nueces, Tex.; and Las Cruces, N. Mex. (Biol. Cent.-Amer., Dipt., Vol. II, p. 44; January, 1890. *Olenochæta kansensis* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 115; May, 1892.) ..... *varia* v. d. W.

Genus CHÆTOGLOSSA Town.

Chætoglossa Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 125; May, 1892.

Our species have three postsutural and three sternopleural macrochætæ, thorax gray pollinose, marked with three broad, black vittæ, wings hyaline, calypteres whitish:

Third joint of antennæ black; black, the second joint of the antennæ yellow; length, 6 mm. Southern Florida. (Loc. cit., p. 126. *Chætoglossa nigripalpis* Townsend, loc. cit.) ..... *violæ* Town.

Third joint of antennæ yellow; black, the antennæ and palpi yellow; length, 6 mm. Southern Florida. (Loc. cit.) ..*picticornis* Town.

Genus PACHYOPHTHALMUS Br. and Berg.

Pachyophthalmus Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 117; 1889.
Sarcomacronychia Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 100; May, 1892.

This synonym has already been published by Brauer and Bergenstamm.[1] Our species have the thorax gray pollinose and marked with three black vittæ; three postsutural and two sternopleural macrochætæ:

Fourth segment of abdomen wholly black; black, including the palpi; length, 5 to 8 mm. White Mountains and Franconia, N. H.; New Bedford, Mass.; Berkeley, W. Va.; North Carolina; Centerville, Fla., and Austria. A female from Austria received from Brauer and Bergenstamm and by them labeled *Pachyophthalmus signatus* Meig. (System. Besch. Eur. Zweif. Insekten, Vol. IV, p. 303;

[1]Zweif. Kais. Mus. Wien, VI, p. 195; 1893.

1824: *Tachina*. *Pachyophthalmus aurifrons* Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 354; November, 1891: from a cotype specimen. *Pachyophthalmus* sp., and *Sphixapata* sp., Brauer and Bergenstamm *in litt.*) ..... *signatus* Meig.

Fourth segment of abdomen largely or wholly yellow, insect elsewhere black; length, 5 to 9 mm. Tifton, Ga.; Lake Worth, Fla.; Waco, Tex.; Colorado, and Santa Cruz Mountains and Los Angeles County, Cal. (Entomological News, Vol. III, p. 80; April, 1892. *Sarcomacronychia unica* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 101; May, 1892. *Sarcomacronychia sarcophagoides* Townsend, Canadian Entomologist, Vol. XXIV, p. 165; July, 1892. *Sarcomacronychia trypoxylonis* Townsend, Bulletin Ohio Agr. Exper. Station, Vol. I, No. 3, p. 165; April, 1893.) ..... *floridensis* Town.

Genus SENOTAINIA Macq.

Senotainia Macquart, Diptères Exotiques, Supplement I, p. 167; 1846.
Arrenopus Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, Vol. V, p. 360; 1891.

Our species have three postsutural and two sternoplural macrochætæ, two pairs of orbital bristles in both sexes; thorax, scutellum, and legs, black:

1. Third joint of antennæ black ..... 2.

Third joint of antennæ yellow, last three segments of abdomen gray pollinose on the bases, that on the second and third prolonged to the hind end of the segments in the middle of the dorsum, where it incloses a black triangle; sides of abdomen sometimes partly yellow; length, 4 to 7 mm. Toronto, Canada; New Hampshire; Springfield, Mass.; Maryland; Tifton, Ga.; Georgiana, Fla.; Lexington, Ky.; northern Illinois; Las Cruces, N. Mex., and southern California. (Diptères Exotiques, Supp. I, p. 167; 1846. *Miltogramma erythrocera* Thomson, Kongliga Sven. Fregatten Eugenies Resa, Diptera, p. 523; 1868. *Miltogramma fulvicornis* van der Wulp, Biol. Cent.-Amer., Diptera, Vol. II, p. 89; March, 1890. *Miltogramma flavicornis* Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 355; November, 1891. *Miltogramma similis* Townsend, loc. cit., p. 357. *Miltogramma kansensis* Townsend, Canadian Entomologist, Vol. XXIV, p. 68; March, 1892. *Miltogramma decisa* Townsend, Entomological News, Vol. III, p. 81; April, 1892.) ..... *rubriventris* Macq.

2. Abdomen wholly black ..... 3.

Abdomen yellow, base of the first segment, apex of the fourth, and the genitalia, black, bases of the last three segments white pollinose, abdomen elsewhere shining, second segment destitute of a marginal pair of macrochætæ; sides of front and the face silvery white pollinose, antennæ black; thorax gray pollinose,

the vittæ indistinct; wings hyaline, calypteres white; length, 3 mm. Las Cruces, N. Mex. Two male specimens collected September 17, by Mr. T. D. A. Cockerell. Type No. 3580, U. S. National Museum ..... *nana* n. sp.

3. Second segment of abdomen bearing a distinct marginal pair of macrochætæ, abdomen gray pollinose, usually marked with two or three rows of blackish spots; length, 3 to 6 mm. Toronto, Canada; White Mountains, New Hampshire; Springfield, Mass.; New York City, N. Y.; Maryland; Virginia; North Carolina; Tifton, Ga.; Texas; Colorado; Washington, and southern California. (Biol. Cent.-Amer., Diptera, Vol. II, p. 89; March, 1890: *Miltogramma*. *Arrenopus americana* Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 361; 1891. *Miltogramma argentifrons* Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 357; November, 1891. *Miltogramma cinerascens* Townsend, loc. cit., p. 358. *Arrenopus* sp., and *Sphixapata* sp., Brauer and Bergenstamm *in litt.*) ..... *trilineata* v. d. W.

Second segment destitute of a marginal pair of macrochætæ, abdomen shining, bases of last three segments white pollinose; black, the frontal vitta, first two joints of antennæ and the palpi, yellow; sides of front and face white pollinose, thorax whitish pollinose, the vitta not distinct, wings hyaline, calypteres white; length, 3 mm. Las Cruces, N. Mex. A single male specimen collected September 17 by Mr. T. D. A. Cockerell. Type No. 3581, U. S. National Museum ..... *fasciata* n. sp.

Genus PSEUDOTRACTOCERA Town.

Pseudotractocera Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 107; May, 1892.

Our species has three postsutural and three sternopleural macrochætæ, is black, the first two joints of the antennæ and the palpi yellow; apex of antennæ distant from the oral margin the length of the third antennal joint; length, 7.5 mm. From a co-type specimen. Las Cruces, N. Mex. (Loc. cit., p. 108.) ..... *neomexicana* Town.

Genus BIOMYIA Rond.

Fabricia Meigen, System. Besch. Eur. Zweif. Insekten, Vol. VII, p. 250; 1838. (*Non* Blainville; 1828. *Non* Desvoidy; 1830.)
Biomya Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 72; 1856.
Viviania Rondani, loc. cit., Vol. IV, p. 53; 1861.
Masiphya Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 313; 1891.

Viviania was proposed for the genus Fabricia of Meigen, the name Fabricia having been previously used by at least two different authors. On the same page Rondani acknowledges that his genus Biomyia is synonymous with Viviania. Specimens identified by Brauer and Bergenstamm as *Masiphya brasiliana*, the type species of this genus, do not possess any character of sufficient importance to warrant its sep-

aration from Biomyia.[1] Our species have only three sternopleural macrochætæ, the second and third segments of the abdomen destitute of discal ones, second joint of antennæ and the palpi, yellow:

1. Thorax bearing only three postsutural macrochætæ ..... 2.
   Thorax bearing four postsutural macrochætæ, middle tibiæ each bearing only one on the front side near the middle, scutellum and sides of first three segments of the abdomem black, apex of the fourth segment yellow, antennæ two-thirds as long as the face; length, 11 mm. Florida. (Proc. Acad. Nat. Sci. Philadelphia, p. 309; September, 1895: *Masiphya.*) ....*aurigera* Coq.
2. Antennæ at least three-fourths as long as the face; scutellum and abdomen wholly black ..... 3.
   Antennæ two-thirds as long as the face, middle tibiæ each bearing two or more macrochætæ on the front side near the middle; apex of scutellum and sides and apex of abdomen yellow; length, 9 to 12 mm. District of Columbia; Maryland; Virginia; Tifton, Ga.; Biscayne Bay, Fla., and Los Angeles Co., Cal. (Zweif. Kais. Mus. Wien, V, p. 313; 1891: *Masiphya.* Also *in litt. Tachinomyia floridensis* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 97; May, 1892.) .*brasiliana* Br. and Berg.
3. Cheeks one-fifth as broad as the eye height, front in each sex one-half as wide as either eye, abdomen subopaque gray pollinose, hind margins of the second and third segments and reflecting spots darker; length, 5 to 6 mm. Amherst, Mass., and Los Angeles County, Cal. (Zweif. Kais. Mus. Wien, V, p. 312; 1891: *Viviania. Masicera sordicolor* Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 359; December, 1891. *Pseudotractocera calosomæ* Coq. MS., Burgess in Rept. Mass. State Board Agric., p. 83; January, 1897.) .....*georgiæ* Br. and Berg.
   Cheeks one-tenth as broad as the eye height, front of female as wide as either eye; black, the palpi and apex of proboscis yellow; frontal bristles descending almost to apex of the second antennal joint, five pairs of orbital bristles in the female, sides of face at narrowest part each one-tenth as wide as the median depression, vibrissæ half the length of the second antennal joint above the oral margin, ridges bristly on the lowest fourth, antennæ reaching slightly below lowest third of face, the third joint one and one-half times as long as the second, arista thickened almost to the middle, the penultimate joint as broad as long; thorax thinly gray pollinose, marked with four black vittæ, scutellum bearing three long marginal pairs of macrochætæ, abdomen

[1] An Austrian specimen received from Brauer and Bergenstamm and by them labeled *Viviania pacta* Meig., has the apical cross vein strongly concave, and not straight, as stated by these authors in Zweif. Kais. Mus. Wien, VI, p. 111; 1893.

subshining, last three segments lightly grayish pollinose except their apices, each segment bearing marginal macrochætæ, wings hyaline, base of third vein bearing three bristles near the base, apical cell closed and very short petiolate, ending slightly before the extreme wing tip; calypteres whitish; length, 4 mm. Tifton, Ga. A single female specimen collected in June, 1896, by Mr. G. R. Pilate. Type No. 3582, U. S. National Museum. *genalis* n. sp

Genus ATACTA Schiner.

Atacta Schiner, Reise der Fregatte Novara, Diptera, p. 328; 1868.

Our single species is black, the apex of the scutellum yellowish, the fourth segment of the abdomen wholly golden yellow; front of male less than one-third as wide as either eye, the sides bluish-gray pollinose and thickly covered with short suberect hairs, frontal bristles descending nearly to middle of second antennal joint, cruciate except the vertical pair; cheeks one-fourth as wide as the eye-height, face yellow pollinose, the ridges broadly bordered internally with black, sides of face at narrowest part one-third as wide as the median depression, vibrissæ situated two-thirds the length of the second antennal joint above the level of front edge of oral margin, ridges bristly on the lowest fifth, antennæ two-thirds as long as the face, the third joint slightly longer than the second, arista thickened on the basal two-fifths, the penultimate joint broader than long; thorax gray pollinose, marked with four black vittæ, four postsutural and four sternopleural macrochætæ, scutellum bearing three pairs of long marginal; abdomen gray pollinose on the first three segments, the first two destitute of dorsal macrochætæ, the last two each bearing a marginal row; front pulvilli as long as the last tarsal joint, middle tibiæ each bearing four or more macrochætæ on the front side near the middle; wings hyaline, third vein bearing two or three bristles near the base, calypteres white; length, 12 mm. Tifton, Ga. A single male specimen collected September 28, 1896, by G. R. Pilate. Type No. 3583, U. S. National Museum..... *apicalis* n. sp.

Genus SIPHOSTURMIA, new genus.

The principal characters of this genus have been given in the table of genera on previous pages. The type species is black, the first two joints of antennæ, lower part of face, palpi, scutellum, apex of abdomen, and sometimes the sides, yellow; four postsutural and four sternopleural macrochætæ, two or more on front side of each middle tibia near the middle, marginal ones on the first three, or the second and third, segments of abdomen; length, 10.5 mm. Tifton, Ga., and Florida. (Journal N. Y. Ent. Soc., Vol. III, p. 106; September, 1895: *Argyrophylax.*) ..... *rostrata* Coq.

Genus BELVOSIA Desv.

Belrosia Desvoidy, Essai sur les Myodaires, p. 103; 1830.
Latreillia Desvoidy, loc. cit., p. 104. (*Non* Roux; 1827.)
Willistonia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 97; 1889.

The identity of Belvosia and Latreillia has been acknowledged by several authorities; and Brauer and Bergenstamm state[1] that the latter (the name of which is preoccupied in the Crustacea) is a subgenus of Willistonia. Our species have four postsutural and four sternopleural macrochætæ:

1. Third abdominal segment yellowish pollinose except apically, wings brownish ..... 2.

   Third segment destitute of yellowish pollen, abdomen gray pollinose except on the fourth segment, which is yellow pollinose, frontal vitta yellow, wings hyaline; length, 10 to 12 mm. Massachusetts; Ithaca and New York, N. Y.; Chicago, Ill.; Tifton, Ga.; and Mississippi. (Essai sur les Myodaires, p. 105; 1830: *Latreillia*. *Exorista flavicauda* Riley, Second Rept. Ins. Missouri, p. 51; 1870: from the type specimen.) ..*unifasciata* Desv.

2. Sides of face at narrowest part each one-third as wide as the median depression, frontal vitta yellow, abdomen black, bases of last three segments yellowish gray pollinose; length, 11 mm. Charlotte Harbor, Florida. (Proc. Acad. Nat. Sciences Phila., p. 312; September, 1895.) ..... *slossonæ* Coq.

   Sides of face at narrowest point each more than one-half as wide as median depression, frontal vitta dark brown, abdomen black, the last two segments except their apices yellowish pollinose, base of the second sometimes also narrowly yellowish pollinose; relation of second and third antennal joint varies as follows: female, third joint $1\frac{1}{2}$, $1\frac{3}{4}$, 2, $2\frac{1}{2}$ times as long as the second; male, third joint $2\frac{1}{4}$, 3, $3\frac{1}{2}$, and 4 times as long as the second; facial ridges bristly in female $\frac{1}{3}$, $\frac{2}{5}$, and $\frac{2}{3}$, in male $\frac{2}{3}$ to $\frac{3}{4}$ distance above the vibrissæ; length, 13 to 17 mm. Springfield, Mass.; District of Columbia; North Carolina; Tifton, Ga.; Mississippi; St. Louis, Mo.; Illinois; Los Angeles Co., Cal.; Waco, Tex., and Mexico. (Systema Entomologiæ, p. 777; 1775: *Musca*. *Belvosia bicincta* Desvoidy, Essai sur les Myod., p. 103; 1830. *Latreillia bifasciata* F., Brauer and Bergenstamm *in litt.*) ..*bifasciata* Fabr.

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[1] Zweif. Kais. Mus. Wien, VI, p. 213; 1893.

Genus MELANOPHRYS Will.

Melanophrys Williston, Trans. Amer. Ent. Soc., Vol. XIII, p. 305; November, 1886.
Atropharista Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 92; April, 1892.

Mr. Townsend has already acknowledged this synonymy.[1] Our species are black, the arista and usually the palpi and calypteres yellow, bases of wings strongly tinged with yellow; three postsutural and three sternopleural macrochætæ:

Second abdominal segment bearing a marginal pair of macrochætæ, the third segment bearing a marginal row of from six to eight; length, 14 mm. Los Angeles County, Cal. (Trans. Amer. Ent. Soc., Vol. XIII, p. 306; November, 1886.) ..... *flavipennis* Will.

Second segment destitute of a marginal pair of macrochætæ, the third usually bearing a dorsal pair and a single lateral one each side; length, 12 to 14 mm. Grimsby, Canada; Franconia and White Mountains, New Hampshire; northern Illinois, and Colorado. (Insecta Saundersiana, Vol. I, p. 277; 1856: *Tachina. Atropharista jurinoides* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 92; April, 1892. *Melanophrys flavipennis* Will., Brauer and Bergenstamm *in litt.*) ..... *insolita* Walk.

Genus APHRIA Desv.

Aphria Desvoidy, Essai sur les Myodaires, p. 89; 1830.
Olivieria Meigen, Systematische Besch. Eur. Zweif. Insekten, Vol. VII, p. 266; 1838. (*Non* Desvoidy, Essai sur les Myod., p. 228; 1830.)
Rhynchosia Macquart, Annales Soc. Ent. France, p. 87; 1848.

Macquart (loc. cit.) proposed the name Rhynchosia for the genus to which Meigen had given the name of Olivieria, owing to the fact that Desvoidy had previously used the latter name for an entirely different genus. The synonymy of Rhynchosia and Aphria was first pointed out by Rondani,[2] and is repeated by Schiner[3] and also by Brauer and Bergenstamm.[4] Our single species is black, the frontal vitta, the first two joints of the antennæ usually, the palpi, and sides of abdomen largely, yellowish; male destitute of orbital bristles; three postsutural and three sternopleural macrochætæ; length, 6 to 10 mm. Toronto, Canada; Massachusetts; Atco, N. J.; Georgia; northern Illinois; Colorado; Washington, and southern California. (Trans. Amer. Ent. Soc., Vol. XVIII, p. 361; December, 1891. *Aphria* sp.. Brauer and Bergenstamm *in litt.*) ..... *ocypterata* Town.

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[1] Trans. Amer. Ent. Soc., Vol. XXII, p. 72; March, 1895.
[2] Dipterologiæ Italicæ Prodromus, Vol. I, p. 73; 1856.
[3] Fauna Austriaca, Vol. I, p. 432; 1862.
[4] Zweif. Kais. Mus. Wien, VI, p. 237; 1893.

Genus OCYPTERA Latr.

Ocyptera Latreille, Histoire Nat. Crust. et Insectes, Vol. XIV, p. 378; 1804.
Parthenia Desvoidy, Essai sur les Myodaires, p. 231; 1830.

This synonymy is given by Schiner[1] and repeated by Brauer and Bergenstamm.[2] Our species have three postsutural and two or three sternopleural macrochætæ:

1. Scutellum bearing one pair of long marginal and sometimes a short apical pair of macrochætæ ..... 2.

   Scutellum bearing two pairs of long marginal and a short apical pair of macrochætæ; abdomen black, the sides of the second and third segments partly or wholly reddish yellow; length, 8 to 12 mm. Canada; Springfield, Mass.; Connecticut; Cape May, N. J.; Maryland; Tifton, Ga.; Selma, Ala.; Tennessee; Lexington, Ky.; Michigan; Illinois; Cadet, Mo.; Kansas; Colorado; Santa Cruz Mountains and Los Angeles County, Cal. (Essai sur les Myodaires, p. 232; 1830: *Parthenia*. *Ocyptera dotades* Walker, List of Dipterous Insects, Part IV, p. 694; 1849. *Ocyptera epytus* Walker, loc. cit. *Ocyptera euchenor* Walker, loc. cit., p. 696. *Ocyptera californica* Bigot, Annales Soc. Entomol. France, p. 42; 1878. *Ocyptera fumipennis* Bigot, loc. cit., p. 43. *Ocyptera binotata* Bigot, loc. cit., p. 44. *Ocyptera* sp., Brauer and Bergenstamm *in litt.*) ..... *carolinæ* Desv.

2. With a short apical pair of macrochætæ on the scutellum; abdomen black, the front corners of the third segment sometimes faintly reddish; length, 7 to 8 mm. Westville, N. J.; Delaware County, Pa.; northern Virginia; and Missouri. (Proc. Ent. Soc. Washington, Vol. II, p. 144; April 2, 1891.) ..... *argentea* Town.

   Without an apical pair of macrochætæ on the scutellum; abdomen black, the sides of the second and front corners of the third segment reddish yellow; length, 7 to 10 mm. White Mountains, New Hampshire; Horseneck Beach, Mass.; northern Illinois; Georgia; Louisiana; Texas; and Reno, Nev. (List of Dipterous Insects, Part IV, p. 695; 1849. *Ocyptera* sp., Brauer and Bergenstamm *in litt.*) ..... *dosiades* Walk.[3]

Genus LINNÆMYIA Desv.

Linnæmya Desvoidy, Essai sur les Myodaires, p. 52; 1830.
Bonnetia Desvoidy, loc. cit., p. 55.
Bonellia Desvoidy, loc. cit., p. 56.
Marshamia Desvoidy, loc. cit., p. 57.
Micropalpus Macquart, Historie Nat. Insectes, Diptères, Vol. II, p. 80; 1835.

The author last mentioned referred the above four names of Desvoidy to one genus to which he applied the name of Micropalpus, but the law

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[1] Fauna Austriaca, Vol. I, p. 412; 1862.

[2] Zweif. Kais. Mus. Wien, VI, p. 235; 1893.

[3] *Ocyptera litturata* Olivier belongs to the Dexid genus Euantha, and is the same species which Wiedemann afterwards described as *Dexia dives*.

of priority compels us to adopt the oldest name. Our species have three postsutural and three sternopleural macrochætæ; front tarsi of female as broad as the apex of the front tibiæ, in the male much narrower:

Cheeks bearing black macrochætæ in the centers, frontal vitta black or dark brown, male destitute of orbital bristles, his genitalia at most projecting one-fifth the length of the fourth abdominal segment beyond the latter, hind crossvein bent nearly S-shape; length, 11 mm. White Mountains, New Hampshire; Beverly, Mass., and Austria. Two males and one female from Austria received from Brauer and Bergenstamm and by them named *Micropalpus hæmorrhoidalis* Fall. and *Micropalpus pudicus* Rond., but both names are evidently wrong, since the male of *hæmorrhoidalis* is provided with orbital bristles, and *pudicus* has no black macrochætæ on the center of the cheeks. (System. Besch. Eur. Zweif. Insekten, Vol. IV, p. 261; 1824: *Tachina.*) *picta* Meig.

Cheeks destitute of black macrochætæ near the centers, frontal vitta light yellow, male provided with two pairs of orbital bristles, his genitalia projecting nearly half the length of the fourth abdominal segment beyond the latter, hind crossvein nearly straight; length, 9 to 12 mm. London, Canada; Maryland; District of Columbia; Texas; Santa Fe, N. Mex.; California, and Pullman, Wash. (Kongl. Svenska. Vetensk. Akad. Handlinger, Vol. XXXI; 1810: *Tachina. Tachina fulgens*[1] Meigen, System. Besch. Eur. Zweifl. Insekten, Vol. IV, p. 259; 1824. *Linnæmya heraclæi* Desvoidy, Essai sur les Myodaires, p, 53; 1830. *Linnæmya analis* Desvoidy, loc. cit., p. 54. *Linnæmya distincta* Desvoidy, loc. cit. *Linnæmya æstivalis* Desvoidy, loc. cit. *Linnæmya borealis* Desvoidy, loc. cit. *Marshamia analis* Desvoidy, loc. cit., p. 58. *Marshamia nigripes* Desvoidy, loc. cit. *Micropalpus piceus* Macquart, Hist. Natur. Insectes, Dipteres, Vol. II, p. 84; 1835. *Micropalpus* sp., Brauer and Bergenstamm *in litt.*) ..... *comta* Fallen.

Genus NEMORÆA Desv.

Nemoræa Desvoidy, Essai sur les Myodaires, p. 70; 1830.

Our single species is black, the antennæ, palpi, and fourth abdominal segment except its extreme apex, yellow; three postsutural and three

[1] Meigen did not recognize *comta*, and therefore unknowingly redescribed it under the name of *fulgens;* this was suspected by Zetterstedt (Dipt. Scand., Vol. III, p. 1097; 1844) and given as certain by Rondani (Dipt. Ital. Prod., Vol. III, p. 70; 1859). The *comtus* of Schiner, Fauna Austriaca, Vol. I, p. 429, is not that species, but a color variety of *hæmorrhoidalis;* the species he describes under *fulgens* is the true *comtus*. In the Annales Soc. Ent. France for 1844, page 31, Desvoidy acknowledges that his *Linnæmya heraclæi, analis,* and *æstivalis* belong to one species, and in the same serial for 1845, page 271, Macquart adds *borealis* to this list and refers them to *fulgens*. The name of *Micropalpus piceus* was proposed by Macquart to take the place of *Marshamia analis* Desvoidy. The writer is responsible for the synonymy of *piceus, distincta* and *nigripes*.

sternopleural macrochætæ, scutellum bearing three long marginal pairs, a distinct brown cloud on the small crossvein; length, 8.5 mm. From the type specimen. Washington. (Jour. N. Y. Ent Soc., Vol. III, p. 104; September, 1895.) ..... *labis* Coq.

Genus **PANZERIA** Desv.

Panzeria Desvoidy, Essai sur les Myodaires, p. 68; 1830.
Ernestia Desvoidy, loc. cit., p. 60.
Fausta Desvoidy, loc. cit., p. 62.
Erigone Desvoidy, loc. cit., p. 65. (*Non* Savigny, 1827.)

This synonymy has been given by various authors, and, with the exception of Erigone, is repeated by Brauer and Bergenstamm. Erigone they retain as a distinct genus, but the name is preoccupied in the Arachnida, and the species they place in it are too closely allied to Panzeria to be separated generically. Our species have three sternopleural macrochætæ, and the small crossvein is not clouded with brown:

Scutellum bearing three pairs of long marginal macrochætæ besides the apical pair; body very robust, front tarsi of female greatly dilated, usually four but sometimes only three postsutural macrochætæ; coloring variable, the second antennal joint, palpi, apex of scutellum and of abdomen usually yellow but sometimes black; length, 7 to 11 mm. Mount Washington and Franconia, N. H.; New Bedford, Mass.; Riverview, Md.; District of Columbia; St. Louis, Mo.; Waco, Tex.; Brookings, S. Dak.; Colorado; San Francisco, Cal.; Olymphia, Wash.; British Columbia; Bohemia, Austria; Germany, and England. A male from Austria received from Brauer and Bergenstamm, and by them labeled *Erigone radicum* Fabr.; two males and one female from Germany, received from Zeller and by him labeled *Nemoræa radicum;* also a male from England received from Brunetti and by him labeled like the last. (Systema Entomologiæ, p. 778; 1775: *Musca*. The following synonymy is given by Schiner, Fauna Austriaca, Vol. I, p. 452: *Erigone anthophila* Desvoidy, Essai sur les Myodaires, p. 66; 1830. *Erigone scutellaris* Desvoidy, loc. cit. *Erigone puparum* Desvoidy, loc. cit. *Erigone viridulans* Desvoidy, loc. cit., p. 68. *Erigone dubia* Desvoidy, loc. cit. *Nemoræa minor* Macquart, Annales Soc. Ent. France, Vol. VI, p. 112; 1848. The following is original with the writer: *Tachina ampelus* Walker, List of Dipterous Insects, Part IV, p. 732; 1849. *Hystricia aldrichi* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 91; April, 1892: from a cotype specimen. *Erigone* sp. Brauer and Bergenstamm *in litt.*) ..... *radicum* Fabr.

Scutellum bearing only two pairs of long marginal macrochætæ besides the apical pair; body slender, front tarsi of female not dilated; black, including the palpi; front of male three-fifths as wide as, in the female slightly wider than, either eye, two pairs

of orbital bristles in the female, none in the male, frontal bristles descending below middle of second antennal joint, cheeks one-fourth as wide as the eye-height, facial ridges bristly on the lowest fourth, antennæ four-fifths as long as the face, the third joint one and one-half times as long as the second, arista thickened on the basal fourth, the penultimate joint shorter than broad; thorax gray pollinose, marked with three black vittæ, three postsutural machrochætæ; abdomen thinly gray pollinose and with blackish reflecting spots, last three segments bearing discal and marginal macrochætæ; middle tibiæ each bearing two or more macrochætæ on the front side near the middle, front pulvilli of male as long as the last tarsal joint; wings hyaline, third vein bearing one or two bristles near the base; calypteres white; length, 9 mm. Norfolk, Va., and Kirkwood, Mo. Four males and two females. Type No. 3586, U. S. National Museum. . *penitalis* n. sp.

Genus MACROMEIGENIA Br. and Berg.

Macromeigenia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 311; 1891.

The type species is black, the first two antennal joints, palpi, and fourth abdominal segment, except sometimes its base, yellow; four postsutural and three sternopleural macrochætæ; length, 11 to 14 mm. Northern Virginia and Tifton, Ga. (Ausser. Zweif. Insekten, Vol. II, p. 309; 1830: *Tachina. Tachina interrupta* Walker, Insecta Saundersiana, Vol. I, p. 295; 1856.) . . . . . *chrysoprocta* Wied.

Genus GYMNOCHÆTA Desv.

Gymnochæta Desvoidy, Essai sur les Myodaires, p. 371; 1830.

Body, occiput, and sides of front green, antennæ and legs black; sometimes the third antennal joint is yellow, and rarely the entire antennæ is yellow; palpi yellow, frontal bristles in single rows; length, 10 to 12 mm. Newark, N. J., and Colorado. (Diptera Amer. Sept. Indigena, Cent. VIII, No. 61; 1869. *Gymnochæta ruficornis* Williston, Trans. Amer. Ent. Soc., Vol. XIII, p. 302; October, 1886.) . . *alcedo* Loew.

Unrecognized species.—*G. virida* Williston, Trans. Amer. Ent. Soc., Vol. XIII, p. 302; October, 1886. Pa.

Genus METAPHYTO, new genus.

The characters of this genus may be gleaned from the above table of genera and the following description of the type species: Black, the apex of the scutellum yellowish; front of female one and one-third times as wide as either eye, two pairs or orbital bristles, frontals descending to middle of second antennal joint, vibrissæ slightly above the level of front edge of oral margin, two or three bristles above each, antennæ nearly four-fifths as long as the face, the third joint one and

one-third times as long as the second, arista thickened on the basal half, the penultimate joint scarcely longer than wide; thorax thinly gray pollinose, marked with four black vittæ, three postsutural and three sternopleural macrochætæ, scutellum bearing four marginal pairs, abdomen thinly gray pollinose on the last three segments, which bear marginal macrochætæ; front tarsi noticeably dilated; middle tibiæ each bearing three or more macrochætæ on the front side near the middle, hind tibiæ not ciliate outwardly; wings hyaline, the base yellow, third vein bearing three or four bristles near the base, bend of fourth vein angular and bearing a stump about as long as the small crossvein, the vein beyond it strongly arcuate, hind crossvein near last fourth of distance from the small to the bend; calypteres white; length, 9 mm. Colorado. Two female specimens collected by Mr. Carl F. Baker. Type No. 3587, U. S. National Museum.....*genalis* n. sp.

Genus **EXORISTOIDES**, new genus.

The characters of this genus, of which *johnsoni* is the type species, may be gleaned from the table of genera on preceding pages of this work and from the description of this species given below:

Third joint of antennæ concave on the front edge, three or four sternopleural macrochætæ, apex of scutellum and of abdomen black; black, the palpi, and sometimes the base of the third antennal joint, yellow; front in male three-fourths as wide as, in the female slightly wider than, either eye, two pairs of orbital bristles in the female, wanting in the male, frontal bristles descending to the arista, cheeks one-fourth as wide as the eye height, vibrissæ on a line with front edge of oral margin, two or three bristles above each, antennæ almost as long as the face, the third joint in the male five, in the female two and one-third, times as long as the second, arista thickened on the basal two-fifths to three-fifths, the penultimate joint slightly longer than broad; thorax gray pollinose, marked with four black vittæ, three postsutural macrochætæ, scutellum bearing three long marginal pairs and a short apical pair; abdomen thinly gray pollinose and with reflecting darker spots, last three segments bearing discal and marginal macrochætæ; middle tibiæ bearing three or more on the front side of each near the middle, front tarsi of female greatly dilated, front pulvilli of male almost as long as the last tarsal joint; wings hyaline, first vein bearing two or more bristles on the outer half, third vein bristly almost to the small crossvein, bend of fourth vein almost rectangular, destitute of an appendage, vein beyond the bend strongly arcuate, hind crossvein nearly straight, slightly beyond middle between the small and the bend; calypteres white; length, 6 to 7 mm. Eastport, Me.; Franconia, N. H.; Westville and Clementon, N. J. Three males and three females, collected May 30 and July

21, 1895, by Mrs. A. T. Slosson and Mr. C. W. Johnson. Type No. 3588, U. S. National Museum. (*Somoleja* sp., Brauer and Bergenstamm *in litt.*) ..... *slossonæ* n. sp.

Third joint of antennæ strongly convex on the front edge, two sternopleural macrochætæ, apex of scutellum and of abdomen, first two joints of antennæ and base of the third yellow; frontal bristles descending to apex of second antennal joint, cheeks two-fifths as broad as the eye height; first vein bristly on one-fourth of its length near the middle, the third bristly almost or slightly over halfway to the small crossvein; length, 9 mm.; otherwise as in above description of *slossonæ*. Hertford County, N. C., and Reno, Nev. Two female specimens; one collected June 9, 1895, by Mr. C. W. Johnson, the other by Mr. H. F. Wickham. Type No. 3589, U. S. National Museum ..... *johnsoni* n. sp.

Genus HYPHANTROPHAGA Town.

Hyphantrophaga Townsend, Psyche, Vol. VI, p. 247; April, 1892.

Our single species is black, the first two joints of the antennæ, palpi, and apex of proboscis yellow; four postsutural and three sternopleural macrochætæ, middle tibiæ each bearing a single macrochæta on the front side near the middle, hind tibiæ outwardly subciliate, second and third segments of abdomen bearing only marginal, the fourth with discal and marginal macrochætæ: length, 7 mm. From a cotype specimen. Las Cruces, N. Mex. (Psyche, Vol. VI, p. 176; November, 1891: *Meigenia.*) ..... *hyphantriæ* Town.

Genus EXORISTA Meig.

Exorista Meigen, in Illiger's Magazin für Insektenkunde, Vol. II, p. 280; 1803.
Lydella Desvoidy, Essai sur les Myodaires, p. 112; 1830.
Phryno Desvoidy, loc. cit., p. 143.
Phryxe Desvoidy, loc. cit., p. 158.
Carcelia Desvoidy, loc. cit., p. 176.
Aplomya Desvoidy, loc. cit., p. 184.
Eurygaster Macquart, Histoire Naturelle Diptères, Vol. II, p. 115; 1835.
Hubneria Desvoidy, Annales Soc. Ent. France, p. 601; 1847.
Nemorilla Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 66; 1856.
Blepharidea Rondani, loc. cit., p. 67.
Aporomya Rondani, loc. cit., Vol. III, p. 90; 1859.
Parexorista Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 87; 1889.
Sisyropa Brauer and Bergenstamm, loc. cit., p. 163.
Myxexorista Brauer and Bergenstamm, loc. cit., V, p. 331; 1891.

Rondani places Eurygaster as a synonym of Exorista,[1] and in this he is followed by Schiner,[2] while Brauer and Bergenstamm give this synonymy as probable.[3] Schiner also gives Lydella, Phryno, Carcelia,

[1] Dipterologiæ Italicæ Prodromus, Vol. III, p. 115; 1859.
[2] Fauna Austriaca, Vol. 1, p. 457; 1862.
[3] Zweif. Kais. Mus. Wien, VI, Index; 1893.

Hubneria, and Aporomyia as synonyms of Exorista, and Brauer and Bergenstamm make all of them (with the exception of Aporomyia) synonyms of Parexorista, placing the latter and Nemorilla as subgenera of Exorista. Aporomyia they place in a separate section, Polidea, but an examination of a specimen received from them under the name of *Aporomyia dubia*, the species upon which Rondani founded this genus, proves that it should not be separated from Exorista. Blepharidea, Sisyropa, and Myxexorista they place in as many different sections, even putting Blepharidea in two sections, once in the section Masicera and a second time in the section Phorocera. A careful examination of specimens referred by these authors to these three genera failed to reveal a single generic character for separating them from each other or from typical species of Exorista. Moreover, of four specimens of *Exorista eudryæ* submitted to these authors by Dr. Riley, two of the specimens were referred by them to Sisyropa and two to Myxexorista; and of three specimens of *Exorista flavirostris*, two were referred by them to Sisyropa and the remaining specimen to Myxexorista. These authors give Phryxe as a synonym of Blepharidea.

Our species of Exorista are as follows:

1. Second and third segments of abdomen bearing discal as well as marginal macrochætæ ..... 2.
   Second and third segments destitute of discal macrochætæ ..... 14.
2. With three sternopleural macrochætæ ..... 5.
   With only two sternopleural macrochætæ, male destitute of orbital bristles, hind tibiæ outwardly ciliate, apical cell open ..... 3.
3. Thorax bearing four postsutural macrochætæ, palpi partly or wholly yellow ..... 4.
   Thorax bearing only three postsutural macrochætæ, scutellum black, hairs of abdomen short, depressed, middle tibiæ each bearing a single macrochæta on the front side near the middle; palpi yellow, front in the male one-half, in the female five-sixths, as wide as either eye, third joint of antennæ three and one-half times as long as the second; length, 6 to 9 mm. Franconia, N. H.; Philadelphia, Pa., and northern Illinois. (Canadian Entomologist, Vol. XIX, p. 162; Sept., 1887.) ..... *blanda* O. S.
4. Scutellum yellow, hairs of abdomen rather long and suberect, middle tibiæ each bearing two or more macrochætæ on the front side near the middle, front in the male one-half, in the female five-sixths, as wide as either eye, third joint of antennæ two and one-half times as long as the second; length, 8 to 10 mm. Franconia, N. H., Michigan, Tennessee, Georgia, California, and Austria. A female specimen from the Schiner collection, received from Brauer and Bergenstamm under the name of *Parexorista cheloniæ* Rond. (Dipt. Italicæ Prod., Vol. III, p. 120; 1859. *Sisyropa* sp., Brauer and Bergenstamm *in litt.*) ... *cheloniæ* Rond.

Scutellum black, middle tibiæ each bearing a single macrochæta on the front side near the middle, front in the male two-thirds, in the female five-sixths, as wide as either eye, third joint of antennæ one and one-half times as long as the second: length, 5 to 8 mm. Franconia, N. H.; Beverly, Mass.; District of Columbia; Charleston, S. C.; Biscayne Bay, Fla.; Oxford, Ind.; Moselle, Mo.; Tiger Mills, Tex.; Colorado, and Allende, Mexico. (List of Dipterous Insects, Part IV, p. 754; 1849: *Tachina. Tachina* [*Exorista*] *phycitæ* LeBaron, Second Report Insects Illinois, p. 123; 1872. *Exorista scudderi* Williston, in Scudder's Butterflies of New England, Vol. III, p. 1921; 1889. *Nemorilla* sp., Brauer and Bergenstamm *in litt.*) ..... *pyste* Walk.

5. Palpi yellow ..... 7.

Palpi black, four postsutural macrochætæ, scutellum usually yellow, middle tibiæ each bearing two or more macrochætæ on the front side near the middle, hind tibiæ outwardly ciliate, apical cell open, male destitute of orbital bristles ..... 6.

6. Front in both sexes one and one-fourth times as wide as either eye, third joint of antennæ in the male four, in the female two and one-fourth, times as long as the second, arista thickened to the middle; length, 7 to 8 mm. White Mountains and Franconia, N. H.; Olympia, Wash.; England, and Austria. One female from England received from E. Brunetti and by him named *Exorista vulgaris:* also two males and one female from Austria, from Brauer and Bergenstamm and named by them *Blepharidea vulgaris* Fall. (Kongl. Svenska Vetensk. Akad. Handlinger, Vol. XXXI; 1810: *Tachina.* The following synonymy is given by Rondani[1] and repeated by Schiner:[2] *Lydella scutellaris* Desvoidy, Essai sur les Myodaires, p. 115; 1830. *Exorista distans* Macquart, Annales Soc. Entomol. France, p. 387; 1849. *Exorista audax* Macquart, loc. cit., p. 388. *Exorista florida* Macquart, loc. cit., p. 409. The following synonymy is by the writer: *Tachina* [*Exorista*] *hirsuta* Osten Sacken, Canadian Entomologist, Vol. XIX, p. 163; September, 1887. *Blepharidea ?hirsuta* O. S., Brauer and Bergenstamm *in litt.*) ..... *vulgaris* Fallen.

Front in the male one-half, in the female three-fourths, as wide as either eye; third joint of antennæ in the male two and one-half, in the female one and one third, times as long as the second; arista thickened on the basal third; length, 5 to 8 mm. Toronto, Can.; Franconia, N. H.; Dist. Columbia; Illinois, and southern Cal. (Psyche, Vol. VII, p. 330; Jan., 1896.) .. *nigripalpis* Town.

7. Thorax bearing four postsutural macrochætæ, apical cell open .. 11.

Thorax bearing only three postsutural macrochætæ ..... 8.

8. Middle tibiæ each bearing two or more macrochætæ on the front side near the middle ..... 9.

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[1] Dipterologiæ Italicæ Prodromus, Vol. III, p. 140; 1859.

[2] Fauna Austriaca, Vol. I, p. 458; 1862.

Middle tibiæ each bearing a single macrochæta on the front side near the middle; scutellum black; apical cell open; front in the female three-fourths as broad as either eye; face, white pollinose; third joint of antennæ three times as long as the second; length, 6 mm. Franconia, N. H.; Georgia; Missouri, and Texas. (Biol. Cent. Amer., Dipt., Vol. II, p. 64; Feb., 1890.) . . *ordinaria* v. d. W.

9. Scutellum largely yellow, front bearing numerous short, nearly erect hairs, third vein bearing two bristles near the base, apical cell open, front in the male two-thirds, in the female five-sixths, as wide as either eye, third joint of antennæ in the male two and one-fourth, in the female one and three-fourths, times as long as the second; length, 6 to 8 mm. Toronto, Canada; Franconia, N. H.; Summit County, Colo.; Germany, and Austria. Two females from Germany received from Zeller and by him named *Exorista affinis;* also one female from Austria from the old Schiner collection, received from Brauer and Bergenstamm and by them named *Parexorista polychæta* Macq.[1] (Kongl. Svenska Vetensk. Akad. Handlinger, Vol. XXXI; 1810: *Tachina. Exorista polychæta* Macquart, Annales Soc. Entomol. France, p. 380; 1849. *Tachina epicydes* Walker, List of Dipterous Insects, Part IV, p. 786; 1849. *Parexorista* sp., Brauer and Bergenstamm *in litt.*) . . . . . *affinis* Fallen.

Scutellum black, hairs of front short and inconspicuous, front in the female five-sixths as wide as either eye, the third antennal joint two and one-half times as long as the second . . . . . 10.

Scutellum black except the tip, third joint of antennæ five times as long as the second; black, the palpi and extreme tip of scutellum yellow; front of female as wide as either eye, hairs on its sides sparse but rather long, frontal bristles descending almost to base of third antennal joint, sides of face white pollinose, cheeks one-seventh as wide as the eye-height, antennæ almost as long as the face, arista thickened on the basal third, the penultimate joint shorter than broad; thorax gray pollinose and marked with four black vittæ; scutellum bearing four marginal pairs of macrochætæ, the last pair cruciate and directed backward; abdomen subshining, the last three segments gray pollinose except on their apices, the bristly hairs rather long and subdepressed; wings hyaline, third vein bearing two bristles near the base, the fourth strongly arcuate beyond the bend, calypteres whitish; length, 8 mm. University, North Dakota. A single female specimen collected in June, 1896, by Mr. R. P. Currie . . . *curriei* n. sp.

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[1] In the Zweif. Kais. Mus. Wien, V, p. 320, these authors give *affinis* as a probable variety of *polychæta,* but the two names are evidently referable to one and the same species. Schiner's statement in his Fauna Austriaca, Vol. I, p. 463, that in *affinis* the frontal bristles are in a single row, while in *polychæta* they are in two rows, or irregularly arranged, does not hold true in all the specimens; in one of those from Germany, referred to above, they are in a single row on one side of the front, but are irregularly arranged on the opposite side.

10. Third vein bearing three bristles near its base, apical cell narrowly open or closed and short petiolate; body with a brassy tinge; length, 5 to 6 mm. Colorado and Austria. A female specimen from Austria, received from Brauer and Bergenstamm and by them named *Aporomyia dubia* Rond. (Kongl. Svenska Vetensk. Akad. Hand., Vol. XXXI; 1810: *Tachina.*) ....*dubia* Fall.

Third vein bristly almost to the small crossvein, body with a bluish tinge; black, the palpi yellow; frontal bristles descending slightly below the arista, cheeks one-fourth as broad as the eye height, vibrissæ on a level with front edge of oral margin, two or three bristles above each, antennæ almost as long as the face, arista thickened on the basal half, thorax gray pollinose, marked with four black vittæ, scutellum bearing three long marginal pairs and a short apical pair of macrochætæ, abdomen on last three segments thinly bluish-gray pollinose, first segment bearing marginal, the other three with discal and marginal macrochætæ, bristly hairs of abdomen depressed; front tarsi greatly dilated, hind tibiæ outwardly bearing a few bristles of unequal length; wings hyaline, hind crossvein nearly straight, fourth vein strongly curved inward beyond the bend; calypteres white; length, 6 mm. Tifton, Ga. A single female specimen collected October 20, 1896, by Mr. G. R. Pilate. Type No. 3590, U. S. National Museum .....*spinipennis* n. sp.

11. Middle tibiæ each bearing two or more macrochætæ on the front side near the middle ..... 13.

Middle tibiæ each bearing a single macrochæta on the front side near the middle, hind tibiæ outwardly ciliate..... 12.

12. Apical pair of scutellar macrochætæ curving forward, scutellum wholly black, front in the male two-fifths, in the female from two-thirds to three-fourths, as wide as either eye, third joint of antennæ in both sexes three and one-half times as long as the second; black, the second joint of antennæ usually, the palpi, apex of proboscis, femora usually, and generally the tibiæ, yellow; face white, sides of front grayish white pollinose, two pairs of orbital bristles in the female, wanting in the male, frontal bristles descending to apex of second antennal joint, antennæ six-sevenths as long as the face, arista thickened on the basal fourth, the penultimate joint shorter than broad; thorax gray pollinose, marked with four black vittæ, scutellum bearing three pairs of long marginal and a short forwardly directed apical pair of macrochætæ, abdomen wholly gray pollinose, with darker reflecting spots, the hairs depressed; wings hyaline, third vein bearing two or three bristles near its base, calypteres white, front pulvilli of male slightly longer than the last tarsal joint; length, 6 to 9 mm. Cotuid and Boston, Mass.; District of Columbia; and Camden, Ark. Four males and three females. Type No. 3591, U. S. National Museum..*boarmiæ* n. sp.

Apical pair, etc.; differs from *boarmiæ* as follows: Front of male slightly wider than either eye, his third antennal joint six times as long as the second, antennæ and legs black, arista thickened on the basal two-fifths, abdomen subshining, bases of last three segments grayish pollinose, the hairs suberect and rather long, wings strongly tinged with gray at base and along the costa; length, 7 mm. Mt. Washington, N. H. A single male specimen collected by Mrs. A. T. Slosson ..... *fronto* n. sp.

Apical pair of scutellar macrochætæ directed backward; scutellum on the apex broadly yellow, front of female four-fifths as wide as either eye, third joint of antennæ four and one-half times as long as the second, femora black, third vein bearing four or five bristles at its base; length, 10 mm., otherwise as in the above description of *boarmiæ*. Franconia, N. H. Two female specimens collected by Mrs. A. T. Slosson. Type No. 3592, U. S. National Museum ..... *blandita* n. sp.

13. Scutellum black, pollen of thorax gray, hind tibiæ not ciliate, front in the female one-half as wide as either eye, her third antennal joint three times as long as the second; black, the second antennal joint, palpi and apex of proboscis, yellow; sides of front destitute of hairs, in the female bearing two pairs of orbital bristles, frontal bristles descending to middle of second antennal joint; thorax gray pollinose, marked with four black vittæ, scutellum bearing three pairs of long marginal macrochætæ, abdomen whitish pollinose, its hairs depressed, apex of fourth segment bare, this segment bearing a discal and marginal row of macrochætæ; wings hyaline, third vein bearing three bristles at its base, calypteres white; length, 7 mm. Dist. Columbia. A single female specimen. Type No. 3593, U. S. National Museum ... *isæ* n. sp.

Scutellum yellowish, pollen of thorax yellow, hind tibiæ outwardly ciliate, front of male two-thirds as wide as either eye, his third antennal joint four and one-half times as long as the second; black, the palpi, tibiæ largely, and scutellum yellow; sides of front bearing numerous bristly hairs, no orbital bristles in the male, frontal bristles descending to apex of second antennal joint, thorax yellowish pollinose, marked with four black vittæ, scutellum bearing four pairs of long marginal macrochætæ; abdomen wholly gray pollinose, its hairs rather long and suberect; wings hyaline, third vein bearing three bristles near its base, front calypteres white, the hind ones yellowish; front pulvilli of male slightly longer than the last tarsal joint; length, 10 mm. White Mountains, N. H. A single male specimen. Type No. 3594, U. S. National Museum ..... *helvina* n. sp.

14. With four sternopleural macrochætæ, hind tibiæ outwardly ciliate, middle tibiæ each bearing two or more macrochætæ on the front side near the middle, scutellum largely yellow, four postsutural macrochætæ, arista thickened to the middle ..... 15.

With three sternopleural macrochætæ ..... 18.

With only two sternopleural macrochætæ, hind tibiæ outwardly ciliate, arista thickened on the basal third ..... 16.

15. Palpi black, front in the male three-fourths, in the female one and one-sixth times, as wide as either eye; third joint of antennæ in the male five, in the female three, times as long as the second; length, 5 to 7 mm. White Mountains and Franconia, N. H.; Beverly, Mass.; District of Columbia; Shreveport, La.; Las Cruces, N. Mex.; Tucson, Ariz.; California, and Austria. Two males and one female from Austria, received from Brauer and Bergenstamm, and by them named *Parexorista confinis* Fall. (Diptera Suecia, Muscidæ, p. 32; 1820: *Tachina*. The following synonymy is given by Rondani and repeated by Schiner: *Phryxe zonata* Desvoidy, Essai sur les Myodaires, p. 159; 1830. The following is by Schiner: *Phryxe serrillii* Desvoidy, l. c., and *Phryxe sabulosa* Desvoidy, l. c. The following is by the writer: *Tachina theclarum* Scudder, Canadian Entomologist, Vol. XIX, p. 166; September, 1887. *Exorista chrysophani* Townsend,[1] Entomological News, Vol. II, p. 197; December, 1891.) ... *confinis* Fall.

Palpi yellow, front in the male two-thirds, in the female three-fourths, the width of either eye; third joint of antennæ in each sex four times as long as the second; black, the palpi and scutellum, except at base, yellow; sides of front bearing scattered, rather short, hairs; two pairs of orbital bristles in the female, none in the male; antennæ nearly as long as the face, arista thickened almost to the middle, cheeks one-sixth as wide as the eye height, facial ridges bristly on the lowest fourth to half; thorax gray pollinose, marked with four black vittæ, scutellum bearing two long and two short pairs of marginal macrochætæ, abdomen on the last three segments gray pollinose except the apex of each, the hairs depressed; wings hyaline, base of third vein bearing two bristles, calypteres white; front pulvilli of male slightly longer than the last tarsal joint; length, 5.5 to 8 mm. Maryland, District of Columbia, and Virginia. Two males and five females. Type No. 3595, U. S. National Museum ..... *lobeliæ* n. sp.

16. With four postsutural macrochætæ ..... 17.

With only three postsutural macrochætæ, middle tibiæ each bearing a single macrochæta on the front side near the middle; black, the palpi, scutellum, femora, and tibiæ yellow; front in female two-thirds the width of either eye, the sides bearing numerous rather short hairs, two pairs of orbital bristles in the female, frontal bristles descending nearly to apex of second joint of antennæ, cheeks scarcely one-tenth as broad as the

[1] Mr. Townsend has admitted the synonymy of *chrysophani* and *theclarum* in Trans. Amer. Ent. Soc., Vol. XXII, p. 75; 1895.

eye height, antennæ nearly as long as the face, the third joint four times as long as the second, arista thickened on the basal third, the penultimate joint shorter than broad, facial ridges bristly on the basal fifth, thorax gray pollinose, marked with four black vittæ, scutellum bearing four pairs of long marginal macrochætæ, abdomen on the last three segments gray pollinose, the hairs rather long and suberect; wings hyaline, third vein bearing one or two bristles at its base, calypteres white; length, 9 mm. White Mountains, New Hampshire, and Frankford, Pa. Two females, collected by Mrs. A. T. Slosson and Mr. C. W. Johnson, August 20, 1895. Type No. 3596, U. S. National Museum ..... *amplexa* n. sp.

17. Palpi and legs black, middle tibiæ each bearing two or more macrochætæ on the front side near the middle; front in the male three-fourths, in the female one and one-sixth times, as wide as either eye; a dark brown reflecting spot below each of the lowest frontal bristles; third joint of antennæ in the male three and one-half, in the female two and one-fourth, times as long as the second; length, 9 to 11 mm. Sharon, Mass.; northern Illinois, California, and Oregon. (Can. Entomologist, Vol. XIX, p. 161; September, 1887: *Tachina* [*Exorista*]. *Parexorista futilis* O. S., Brauer and Bergenstamm *in litt.*) ..... *futilis* O. S.

Palpi yellow, middle tibiæ each bearing a single macrochæta on the front side near the middle, front in female three-fifths as wide as either eye, her third antennal joint three and one-half times as long as the second, no dark spots below the lowest frontal bristles; length, 9 mm. Dist. Columbia. (Biologia Cent.-Amer., Diptera, Vol. II, p. 74; February, 1890.) .. *griseomicans* v. d. W.

18. Hind tibiæ outwardly ciliate ..... 19.

Hind tibiæ not ciliate, four postsutural macrochætæ, middle tibiæ each bearing two or more macrochætæ on the front side near the middle; black, the palpi yellow; front in male two-thirds as wide as either eye, the sides bearing numerous rather short hairs, no orbital bristles in the male, frontal bristles descending almost to apex of second antennal joint, cheeks one-sixth as wide as the eye height, facial ridges bristly on the lower half, antennæ nearly as long as the face, the third joint four times as long as the second, arista thickened nearly to the middle, the penultimate joint slightly longer than broad; thorax gray pollinose, marked with four black vittæ, scutellum bearing four pairs of marginal macrochætæ; abdomen whitish pollinose on bases of last three segments, its hairs subdepressed; wings hyaline, third vein bearing three bristles near its base, bend of fourth appendiculate, apical cell short petiolate, calypteres white; length, 6 mm. Virginia. A male specimen. Type No. 3597, U. S. National Museum .. *petiolata* n. sp.

19. Palpi yellow on at least the apical two-thirds ..... 22.
Palpi, except the tips, black ..... 20.

20. Middle tibiæ each bearing two or more macrochætæ on the front side near the middle ..... 21.
Middle tibiæ each bearing a single macrochæta on the front side near the middle; black; front of male three-fifths as wide as either eye, frontal bristles descending to the arista, no orbital bristles, hairs of front numerous and rather long, cheeks one-eighth as wide as the eye height, vibrissæ on a level with front edge of the oral margin, ridges bristly on the lowest fourth, antennæ almost as long as the face, the third joint six times as long as the second, arista thickened on the basal fourth, thorax whitish pollinose, marked with four black vittæ, scutellum bearing three marginal pairs and a short, cruciate apical pair of macrochætæ, the latter curving backward and nearly horizontal; abdomen shining, with a brassy tinge, narrow bases of the second and third segments whitish pollinose, each segment bearing marginal macrochætæ, the bristly hairs rather long and suberect; front pulvilli slightly longer than the last tarsal joint; wings hyaline, third vein bearing two or three bristles near the base; calypteres white; length, 7 mm. Tifton, Ga. A male specimen collected October 17, 1896, by Mr. G. R. Pilate. Type No. 3598, U. S. National Museum ..... *polita* n. sp.

21. With four postsutural macrochætæ (see under 17) ..... *futilis* O. S.
With only three postsutural macrochætæ, front in male four-fifths as wide as either eye, his third antennal joint three and one-half times as long as the second, several macrochætæ outside of the frontal bristles; length, 10 mm. Texas. (Biologia Cent.-Amer., Vol. II, p. 70; February, 1890.) ..... *angustata* v. d. W.

22. Thorax bearing four postsutural macrochætæ, abdomen not tinged with bronze, apical cell open ..... 24.
Thorax bearing only three postsutural macrochætæ, scutellum black, middle tibiæ each bearing a single macrochæta on the front side near the middle ..... 23.

23. Apical cell closed and short petiolate, abdomen strongly tinged with bronze; black, the palpi yellow; front of female one and one-sixth times as wide as either eye, the sides bearing numerous short hairs, two pairs of orbital bristles in the female, frontal bristles descending almost to apex of second antennal joint, cheeks nearly one-fourth as wide as the eye height, facial ridges bristly on the lower half: antennæ five-sixths as long as the face, the third joint three times as long as the second, arista thickened on the basal third, the penultimate joint slightly longer than wide; thorax gray pollinose, marked with four black vittæ, scutellum bearing three long marginal and a short apical pair of macrochætæ, abdomen gray pollinose on the bases of the last three segments, its hairs closely appressed,

the fourth segment bearing a discal and a marginal row of macrochætæ; wings hyaline, third vein bearing three bristles near its base, bend of fourth vein not appendiculate, this vein nearly straight after the bend; calypteres white; length, 7 mm. Northern Ill. A female specimen collected by W. A. Nason. Type No. 3599, U. S. National Museum... *ærata* n. sp.

Apical cell open, abdomen not tinged with bronze; black, the palpi and inner side of each antenna largely yellow, sides of front bearing only a few short hairs, cheeks one-seventh as broad as the eye height, facial ridges bristly on the lowest fifth, third joint of antennæ slightly over twice as long as the second, thorax marked with three black vittæ, scutellum bearing two long and an intermediate short pair of marginal macrochætæ, abdomen on the last three segments gray pollinose and with numerous reflecting black spots, third vein of wing bearing a single bristle near its base, fourth vein strongly curved inward beyond the bend; length, 4 mm., otherwise as above description of *ærata*. Colorado. A female specimen collected by Carl F. Baker. Type No. 3600, U. S. National Museum..*parva* n. sp.

24. Middle tibiæ each bearing a single macrochæta on the front side near the middle, third joint of antennæ in each sex four times as long as the second..... 25.

Middle tibiæ each bearing two or more macrochætæ on the front side near the middle, scutellum largely yellow, pollen of body gray, front in male three-fifths, in the female two-thirds, as wide as either eye, third joint of antennæ in the male three and one-half, in the female three, times as long as the second; length, 6 to 11 mm. Canada; White Mountains, New Hampshire; New Bedford, Mass.; Clementon, N. J.; Maryland; District of Columbia; Virginia; Dayton, Ohio, and St. Louis, Mo. (Trans. Amer. Ent. Soc., Vol. XIX, p. 287; December, 1892. *Myxexorista* sp., Brauer and Bergenstamm *in litt.* *Sisyropa* sp., Brauer and Bergenstamm *in litt.*)..... *eudryæ* Town.

25. Scutellum largely yellow; hairs on basal half of fourth segment of abdomen two-thirds as long as the macrochætæ, front in the male three-fifths, in the female two-thirds, as wide as either eye, the sides olive gray pollinose and bearing numerous nearly erect short hairs; length, 6 to 9 mm. District of Columbia; Jennings, Va.; Fort George, Fla.; and Miss. (Biol. Cent.-Amer., Diptera, Vol. II, p. 69; February, 1890. *Myxexorista* sp., Brauer and Bergenstamm *in litt.*)..... *flavirostris* v. d. W.

Scutellum black; hairs on basal half of fourth segment of abdomen one-third as long as the macrochætæ, front in the male two-thirds, in the female one and one-sixth times, as wide as either eye, the sides silvery gray pollinose, bearing a few very short inconspicuous hairs; black, the second antennal joint, apex of proboscis, and the palpi yellow; two pairs of orbital

bristles in the female, none in the male; frontal bristles descending slightly below the arista, cheeks one-sixth as broad as the eye-height, facial ridges bristly on the lowest third, antennæ almost as long as the face, arista thickened on the basal third or fourth, the penultimate joint as broad as long; thorax gray pollinose, marked with four black vittæ, scutellum bearing four marginal pairs of macrochætæ; abdomen on last three segments wholly gray pollinose, the hairs depressed; wings hyaline, base of third vein bearing two bristles, bend of fourth vein not appendiculate, this vein beyond the bend strongly bent inward; calypteres white, front pulvilli of male longer than the last tarsal joint; length, 5.5 to 8 mm. St. Louis, Mo.; Oswego, Kans.; and Fort Worth, Tex. Four males and two females. Type No. 3601, U. S. National Museum..... *ceratomiæ* n. sp.

Genus EUPHOROCERA Town.

Euphorocera Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 112; May, 1892.

Our species have two or more macrochætæ on the front side of each middle tibia near the middle, and the hind tibiæ outwardly are ciliate or subciliate:

1. Head at the vibrissæ noticeably shorter than at base of antennæ, palpi yellow, three sternopleural macrochætæ..... 2.

Head at the vibrissæ as long as at base of antennæ, palpi black; black, apex of scutellum broadly yellow; front in the male four-fifths, in the female one and one-fifth times, as wide as either eye, two pairs of orbital bristles in the female, wanting in the male, sides of front gray pollinose, destitute of macrochætæ outside of the frontal bristles, the latter descending below the arista, cheeks one-third as broad as the eye-height, facial ridges bristly on the lower two-thirds, antennæ six-sevenths as long as the face, the third joint in the male three, in the female two and one-fourth, times as long as the second, arista thickened almost to the middle, the penultimate joint slightly longer than broad; thorax gray pollinose, marked with four black vittæ, four post-sutural and two large and sometimes two small sternopleural macrochætæ, scutellum bearing four marginal pairs; abdomen shining, bases of the last three segments gray pollinose, hairs rather long and suberect, first segment bearing marginal, the next two with discal and marginal, the fourth covered with macrochætæ except its extreme base; front pulvilli of male longer than the last tarsal joint; wings hyaline, third vein bearing from four to eight bristles at the base, fourth vein beyond the bend strongly arcuate, apical cell narrowly open; calypteres white; length, 7 to 9 mm. Point Barrows, Alaska. One male and two females collected June 24, 1882, by Mr. John Murdock. Type No. 3602, U. S. National Museum..... *gelida* n. sp.

2. With only three postsutural macrochætæ, second and third segments of abdomen bearing discal macrochætæ, facial ridges hairy outside of the bristles, front of female slightly wider than either eye, the sides and face whitish pollinose, third joint of antennæ two and one-half times as long as the second, arista thickened on the basal third, the penultimate joint slightly longer than wide; abdomen subshining, gray pollinose, marked with dark reflecting spots; length, 9 mm. Franconia, N. H. (Biol. Cent.-Amer., Diptera, Vol. II, p. 81; Feb., 1890: *Phorocera.*) ..... *cinerea* v. d. W.

With four postsutural macrochætæ, second and third segments of abdomen destitute of discal macrochætæ, facial ridges bare outside of the bristles; length, 5 to 14 mm. Franconia, N. H.; Massachusetts; Brooklyn, N. Y.; District of Columbia; Virginia; Indiana; Illinois; Jackson, Tenn.; Tifton, Ga.; Crescent City, Fla.; Mississippi; St. Louis, Mo.; Louisiana; Texas; Colorado; Las Cruces, N. Mex., and California. (Dipteres Exotiques, Supplement III, p. 209 [49]; 1847: *Phorocera. Eurygaster septentrionalis* Walker, Lord's Naturalist in Vancouver Island, Vol. II, p. 339; 1866. *Phorocera edwardsii* Williston, Scudder's Butterflies of New England, Vol. III, p. 1921; 1889. *Podotachina vibrissata* Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 351; 1891: also *in litt. Euphorocera tachinomoides* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 112; May, 1892. *Phorocera lophyri* Townsend, loc. cit., p. 289; December, 1892.) ..... *claripennis* Macq.

Genus PHOROCERA Desv.

Phorocera Desvoidy, Essai sur les Myodaires, p. 131; 1830.
Blondelia Desvoidy, loc. cit., p. 122.
Rhinomya Desvoidy, loc. cit., p. 123.
Pales Desvoidy, loc. cit., p. 154.

This synonymy is given by Macquart[1] and repeated by Schiner;[2] Brauer and Bergenstamm also give Pales as equivalent to Phorocera,[3] but make no mention of the other two names:

1. With four sternopleural and four postsutural macrochætæ, palpi black, second and third segments of abdomen bearing discal macrochætæ, sides of front destitute of macrochætæ outside of the frontal bristles, except the orbital bristles of the female; front in the male two-thirds as wide as, in the female slightly wider than, either eye; frontal bristles descending below the arista, the latter thickened on its basal third; third joint of antennæ in the male six, in the female four, times as long as the

[1] Annales Soc. Ent. France, p. 420; 1850.
[2] Fauna Austrica, Vol. I, p. 488; 1862.
[3] Zweif. Kais. Mus. Wien, VI, p. 234; 1893.

second; sides of face below the lowest frontal bristles bare, middle tibiæ each bearing a single macrochæta on the front side near the middle; length, 6 mm. Camden, Ark., and Los Angeles County, Cal. (Annales Soc. Ent. France, Vol. VIII, p. 260; 1888.) ..... *parva* Bigot.

With three sternopleural macrochætæ ..... 2.

With only two sternopleural and four postsutural macrochætæ; middle tibiæ each bearing two or more macrochætæ on the front side near the middle, hind tibiæ outwardly ciliate; black, the palpi brown, the scutellum yellow except at the base, sides of first three segments of abdomen sometimes partly yellow; front in the male three-fifths as broad as either eye, frontal bristles descending to tip of second antennal joint, cheeks scarcely one-eighth as broad as the eye-height, antennæ almost as long as the face, the third joint four and one-half times as long as the second, arista thickened on the basal third, facial ridges bristly on the lower three-fifths to three-fourths; thorax lightly gray pollinose, marked with three broad black vittæ, scutellum bearing four pairs of long marginal macrochætæ, the last pair cruciate and inclined downward; abdomen subshining, the last three segments lightly whitish pollinose, the extreme apices of the segments bare, the bristly hairs rather long and almost erect, first two segments each bearing a marginal pair of macrochætæ, the third with a marginal row, the fourth wholly covered except the extreme base; front pulvilli slightly longer than the last tarsal joint; wings hyaline, the base to apex of second basal cell gray, third vein bearing two bristles at its base; calypteres whitish; length, 6 to 9 mm. Michigan and Missouri. Three male specimens. Type No. 3603, U. S. National Museum ... *tortricis* n. sp.

2. Thorax bearing three postsutural macrochætæ ..... 3.

Thorax bearing four postsuturals, hind tibiæ outwardly ciliate, second and third segments of abdomen bearing discal macrochætæ, several macrochætæ outside of the frontal bristles ... 6.

3. Hind tibiæ outwardly ciliate, scutellum bearing four marginal pairs of macrochætæ ..... 5.

Hind tibiæ not ciliate, scutellum bearing only three pairs of marginal macrochætæ, body slender, last three segments of abdomen destitute of pollen on the broad apices, pollen of face white .. 4.

4. Second and third segments of abdomen destitute of discal macrochætæ, middle tibiæ each bearing only one macrochæta on the front side near the middle; length, 7 mm. Utica, Miss. (Biol. Cent.-Amer., Diptera, Vol. II, p. 84; Feb., 1890.) *macra* v. d. W.

Second and third segments of abdomen bearing discal macrochætæ, middle tibiæ each bearing two on the front side near the middle; length, 9 mm. Newark, N. J. (Biol. Cent.-Amer., Diptera, Vol. II, p. 79; February, 1890.) ..... *rufilabris* v. d. W.

5. Abdomen wholly covered with pollen, opaque; face yellowish pollinose, third antennal joint four times as long as the second; black, the palpi usually and apex of proboscis, yellow, a spot on sides of abdomen of male and the tibiæ also sometimes yellow; front of the male three-fifths, of the female three-fourths, as broad as either eye, two pairs of orbital bristles in the female, none in the male, frontal bristles descending below the arista, cheeks one-fourth as broad as the eye height, antennæ nearly as long as the face, arista thickened on the basal third, facial ridges bristly on the lower four-fifths; thorax gray pollinose, marked with four black vittæ; bristly hairs of abdomen depressed, first two segments each bearing a marginal pair, the third with a marginal row, the fourth with a discal and a marginal row of macrochætæ; wings hyaline, base of third vein bearing two bristles, fourth vein strongly arcuate beyond the bend: calypteres white; length, 7 to 11 mm. Dist. Columbia; Lexington, Ky., and Tenn. Three males and two females. Type No. 3604, U. S. National Museum ..... *leucaniæ* n. sp.

Abdomen destitute of pollen on the broad apices of the last three segments, face white pollinose, third antennal joint from two and one-half to three times as long as the second, front of female from five-sixths as wide as to slightly wider than either eye, frontal bristles descending almost to apex of second antennal joint, facial ridges bristly on the basal two-thirds, third vein bearing two or three bristles at the base, second and third segments of abdomen sometimes bearing discal macrochætæ; length, 6 to 8 mm.; otherwise as in the above description of *leucaniæ*. Northern Illinois, Missouri, Colorado, and Mesilla, N. Mex. (First Rept. Insects of Missouri, p. 111; March, 1869: *Lydella.*) ..... *doryphoræ* Riley.

6. Middle tibiæ each bearing two or more macrochætæ on the front side near the middle ..... 7.

Middle tibiæ each bearing a single macrochæta on the front side near the middle, sides of face below the lowest frontal bristles bare, arista thickened to the middle, the penultimate joint only slightly longer than broad, front in each sex one and one-fourth times as wide as either eye, frontal bristles descending below the arista, third joint of antennæ in the male six, in the female four, times as long as the second; palpi yellow; length, 8 to 9 mm. Dist. Columbia, Bluffton, S. C., and Missouri. (In Scudder's Butt. New England, Vol. III, p. 1922; 1889) *comstocki* Will.

7. Sides of face below the lowest frontal bristles bare, arista thickened on the basal three-fourths, the penultimate joint three times as long as wide, front in each sex one and one-fourth times as broad as either eye, frontal bristles descending below the arista,

third joint of antennæ in the male six, in the female four, times as long as the second, apical cell closed; length, 8 to 9 mm. Alameda County, Cal. (In Scudder's Butterflies of New England, Vol. III, p. 1922; 1889.).....*saundersii* Will.

Sides of face below the frontal bristles bristly two-fifths of the distance to the vibrissæ, arista thickened on the basal third, the penultimate joint only slightly longer than wide; black, the palpi, apex of scutellum, front corners of the second segment of the abdomen, tibiæ, and sometimes base of antennæ, yellowish; front in male scarcely wider than, in the female one and one-fourth times as wide as, either eye, two pairs of orbital bristles in the female, none in the male, frontal bristles descending to the arista, cheeks nearly one-half as wide as the eye-height, antennæ about as long as the face, the third joint six times as long as the second; thorax gray pollinose, marked with four black vittæ, scutellum bearing four pairs of marginal macrochætæ; abdomen wholly gray pollinose and with reflecting darker spots; wings hyaline, base of third vein bearing three bristles, fourth vein beyond the bend distinctly arcuate, calypteres white; length, 7 to 10 mm. San Diego, Tex. A specimen of each sex collected April 30, 1895, by Mr. E. A. Schwarz. Type No. 3606, U. S. National Museum.....*facialis* n. sp.

Unrecognized species.—*P.*? (*Tachina*) *antennata* Walker; U. S. *P.*? (*Tachina*) *melobosis* Walker. (Syn. *Tachina addita* Walker.)

Genus **FRONTINA** Meig.

Frontina Meigen, Systematische Besch. Eur. Zweif. Insekten, Vol. VII, p. 247; 1838.
Prosopea Rondani, Dipterologiæ Italicæ Prodromus, Vol. IV, p. 36; 1861.
Achætoneura Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 334; 1891.
Thysanomyia Brauer and Bergenstamm, loc. cit., p. 340.
Parafrontina Brauer and Bergenstamm, loc. cit., VI, p. 115; 1893.

Brauer and Bergenstamm place Prosopea, Achætoneura, and Parafrontina as subgenera of Frontina;[1] and although they place Thysanomyia in a different section, it can not be generically separated from Frontina.[2] Four Austrian specimens of *Frontina laeta* Meig., the type species of this genus, received from and identified by Brauer and Bergenstamm, have the hind tibiæ outwardly ciliate, as in our species. The latter have the palpi yellow, and from two to four bristles on the base of the third vein:

1. With four sternopleural macrochætæ, scutellum largely yellow and bearing three or four pairs of long marginal and a short apical

[1] Zweif. Kais. Mus. Wien, VI, p. 212; 1893.

[2] Of two specimens of *Frontina aletiæ* sent by Dr. Riley to Brauer and Bergenstamm, one was referred by them to Prosopea and the other to Thysanomyia; of three specimens of *Frontina archippivora*, one was by them referred to Parafrontina and two to Achætoneura, and of fifteen specimens of *Frontina frenchii*, they referred one to Hemimasicera, two to Prosopea, and twelve to Achætoneura.

pair of macrochætæ, second and third segments of abdomen destitute of discal macrochætæ, venter destitute of short black spines ..... 4.

With only three sternopleural macrochætæ, scutellum black, front pulvilli of male slightly longer than the last tarsal joint.... 2.

2. Third joint of antennæ of male five, in the female four, times as long as the second, front of male three-fourths, in the female one and one-fifth times, as wide as either eye; abdomen black, narrow bases of last three segments gray pollinose, second and third segments destitute of discal macrochætæ, middle tibiæ each bearing a single one on the front side near the middle; length, 5 mm. Eastboro, Conn., and Tifton, Ga. (Insecta Saundersiana, Vol. I, p. 299; 1856: *Tachina.*) ..... *ancilla* Walk.

Third joint of antennæ in both sexes two and one-half times as long as the second, front in the male one-half, in the female three-fourths, as broad as either eye, three postsutural macrochætæ, scutellum bearing three pairs of long marginal ones, destitute of a short apical pair, second and third segments of abdomen in the male bearing discal macrochætæ, wanting in the female, venter of these segments in the female thickly studded with short black spines ..... 3.

3. Abdomen in both sexes yellowish except a dorsal vitta, a fascia on the third segment, which sometimes covers it, and the base of the fourth, which are black; length, 6 to 9 mm. Tifton, Ga., and Jacksonville and Lake Worth, Fla. (Proc. Acad. Nat. Sci. Phila., p. 310; September, 1895: *Achætoneura.*) ... *rubentis* Coq.

Abdomen of male black, a spot on each side of first three segments and the narrow apex of the fourth, yellow; in the female black, the narrow apex of the fourth segment yellow; length, 7 to 8.5 mm. Southern California and Allende, Mexico. From the type specimen. (Insect Life, Vol. I, p. 332; May, 1889: *Tachina* [*Masicera*]. *Prospherysa comosa* van der Wulp, Biologia Cent.-Amer., Diptera, Vol. II, p. 119; May, 1890.) .. *armigera* Coq.

4. Second segment of abdomen destitute of a marginal pair of macrochætæ or else the sides of the third segment largely or wholly yellow ..... 6.

Second segment bearing a marginal pair of stout macrochætæ, abdomen black, at most with a yellow spot on each side of the second segment, third joint of antennæ of male from five and one-half to seven, in the female from three to four and one-half, times as long as the second ..... 5.

5. Front in the male one and one-half, in the female one and three-fourths, times as wide as either eye, front pulvilli of male three-fourths as long as the last tarsal joint; length, 6 to 9 mm. Michigan; Missouri; Texas; California, and Pullman, Wash. (In Scudder's Butterflies of New England, Vol. III, p. 1923;

1889: *Masicera*. *Achætoneura* sp., and *Parafrontina* sp., Brauer and Bergenstamm *in litt.*) ..... *archippivora*[1] Will.

Front in the male at most slightly wider than, in the female one and one-third times as wide as, either eye, front pulvilli of male slightly longer than the last tarsal joint; length, 5 to 11 mm. Canada; Beverly, Mass.; New Jersey; Pennsylvania; Lakeland, Md.; District of Columbia; Virginia; Brookville, Ind.; Carbondale, Ill.; Missouri, and California. (In Scudder's Butterflies of New England, Vol. III, p. 1923; 1889: *Masicera*. *Achætoneura hesperus* Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 334; 1891. *Phorocera promiscua*[2] Townsend, Psyche, Vol. VI, p. 84; May, 1891. *Meigenia websteri* Townsend, Canadian Entomologist, Vol. XXIII, p. 203; October, 1891. *Masicera schizuræ*[2] Townsend, Psyche, Vol. VI, p. 187; December, 1891: from a co-type specimen received from Mr. Townsend. *Masicera datanarum* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 287; December, 1892. *Tachina anonyma* Riley MS.: from the proposed type specimen. *Achætoneura* sp., Brauer and Bergenstamm *in litt.* *Prosopæa* sp., Brauer and Bergenstamm *in litt.* *Hemimasicera* sp., Brauer and Bergenstamm *in litt.*) ... *frenchii* Will.

6. Abdomen in both sexes yellow on sides of the third segment, second segment in the male bearing a marginal pair of macrochætæ, or else his front pulvilli only three-fourths as long as the last tarsal joint ..... 7.

Abdomen of the female black, at most with a yellow spot each side of the second segment, this segment in both sexes destitute of a marginal pair of macrochætæ, front pulvilli of male slightly longer than the last tarsal joint, third joint of antennæ of male from two and three-fourths to five, in the female from two and three-fourths to three and one-third, times as long as the second; length, 6 to 11 mm. Toronto, Canada; Beverly, Mass.: Brooklyn, N. Y.; District of Columbia: Georgia; Charlotte Harbor, Florida; Mississippi; Brazoria, Tex.; Los Angeles, Cal., and Venezuela, South America. (Canadian Entomologist, Vol. XI, p. 162; 1879: *Tachina:* from a co-type specimen. *Tachina fraterna* Comstock, Report Commissioner Agric. for 1879, p. 303; 1880. *Prosopæa* sp. Brauer and Bergenstamm *in litt.* *Thysanomyia* sp. Brauer and Bergenstamm *in litt.*) ..... *aletiæ* Riley.

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[1] This species is usually credited to Riley, but he never described it so far as I am aware.

[2] In Psyche for June, 1893, page 467, Mr. Townsend reports having received from Professor Forbes two Tachina flies bred "from pupæ of *Euchætes egle*. Breeding cage, May 4, 1880." One of these he refers to *Masicera schizuræ* and the other to *Prospherysa promiscua*, apparently without suspecting that both of them belonged to one and the same species.

7. Front pulvilli of male distinctly longer than the last tarsal joint, fourth segment of abdomen in both sexes black except the front corners, third joint of antennæ in the male four, in the female from two and three-fourths to three and one-third, times as long as the second; length, 7 to 8 mm. District of Columbia. (List of Dipterous Insects, Part IV, p. 788; 1849: *Tachina. Masicera dubia* Williston, in Scudder's Butterflies of New England, Vol. III, p. 1924; 1889. *Masicera sphingivora* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 286; Dec., 1892).. *violenta* Walk.

Front pulvilli of male only three-fourths as long as the last tarsal joint, fourth segment of abdomen in both sexes yellow except a narrow black dorsal vitta, third joint of antennæ in both sexes two and one-half times as long as the second; length, 8 mm. Jacksonville, Fla. (List of Dipterous Insects, Part IV, p. 788; 1849: *Tachina. Masicera rileyi* Williston, in Scudder's Butterflies of New England, Vol. III, p. 1924; 1889).. *irrequieta* Walk.

Unrecognized species.—F.? (*Tachina*) *dydas* Walker; Brit. Amer.

Genus STURMIA Desv.

Sturmia Desvoidy, Essai sur les Myodaires, p. 171; 1830.
Blepharipa Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 71; 1856.
Ctenocnemis Kowarz, Verhand. Zool. Botan. Gesell. Wien, Vol. XXII, p. 460; 1873.
Blepharipoda Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 96; 1889.
Argyrophylax Brauer and Bergenstamm, loc. cit., p. 163.

Blepharipa was proposed for the genus Sturmia of Desvoidy, owing to the fact that the latter name had been previously used in botany; but, according to present usage, botanical names do not interfere with those employed in zoology. Ctenocnemis and Blepharipoda were proposed to take the place of Blepharipa, owing to the faulty construction of the latter name. In the Zweif. Kais. Mus. Wien, VI, p. 213; 1893, Brauer and Bergenstamm reduce Argyrophylax to the rank of a subgenus of Blepharipoda.[1] All of our species have four postsutural macrochætæ:

1. With four sternopleural macrochætæ..... 7.
With three sternopleural macrochætæ..... 2.
With only two sternopleurals; black, the palpi, at least on the apical half, and apex of proboscis, yellow; front of female from two-thirds to three-fourths as wide as either eye, two pairs of orbital bristles, a stout backwardly curving macrochætæ between them and the frontal bristles, the latter descending nearly to middle

[1] In Scudder's Nomenclator Zoologicus, Supplemental List (p. 46), 1882, is cited a *Blepharopoda* Rondani, Nuovi Annali Sci. Nat. Bologna, Ser. 3, Vol. II, p. 362; 1851, and on page 92 of the same work the genus *Ctenocnemis* of Kowarz is, on the authority of Mr. Verrall, made synonymous with *Blepharopoda*. The writer has been unable to consult the above-mentioned paper by Rondani, but if Mr. Verrall's reference is correct, the name of and reference to *Blepharopoda* Rond. should be inserted immediately after *Sturmia* in the above list of synonyms.

of second joint of antennæ, cheeks one-ninth as wide as the eye height, vibrissæ slightly below the level of front edge of oral margin, ridges bristly on the lowest third, antennæ almost as long as the face, the third joint five times as long as the second, arista thickened on the basal fourth, the penultimate joint shorter than broad; thorax gray pollinose, marked with four black vittæ, scutellum bearing three pairs of marginal macrochætæ and a short apical pair, abdomen opaque gray pollinose, each segment bearing marginal macrochætæ, middle tibiæ each having a single one on the front side near the middle; wings hyaline, third vein bearing from three to six bristles near its base, fourth vein beyond the bend strongly arcuate, calypteres whitish; length, 9 mm. Missouri. Two female specimens. Type No. 3609, U. S. National Museum..... *sternalis* n. sp.

2. Palpi yellow..... 3.

Palpi usually black, fourth segment of abdomen and apex of scutellum yellow; middle tibiæ each bearing a single macrochæta on the front side near the middle, third vein bearing two or three bristles near the base; black, apex of scutellum and of fourth segment of abdomen, also sometimes the palpi, yellow; front of male one half, of the female four-fifths, as wide as either eye; two pairs of orbital bristles in the female, none in the male; frontal bristles descending nearly to apex of second joint of antennæ, cheeks one-sixth as wide as the eye height, vibrissæ on a level with the front edge of oral margin, three bristles above each, antennæ almost as long as the face, the third joint in the male three and one-half, in the female two and one-half, times as long as the second, arista thickened on the basal two-fifths, the penultimate joint as broad as long; thorax gray pollinose, marked with four black vittæ, scutellum bearing four marginal pairs of macrochætæ; abdomen on the second and third segments gray pollinose and with darker reflecting spots, bearing only marginal macrochætæ; wings hyaline, fourth vein beyond the bend strongly arcuate, calypteres white; length, 6 mm. Cape Cod, Mass., and Piney Point, Md. A specimen of each sex; the male bred October 7, 1889, from a species of Phyciodes. Type No. 3610, U. S. National Museum.. *phyciodis* n. sp.

3. Middle tibiæ each bearing a single macrochæta on the front side near the middle..... 5.

Middle tibiæ each bearing three or more macrochætæ on the front side near the middle, apex of abdomen black..... 4.

4. Abdomen destitute of discal macrochætæ on the second and third segments, the fourth wholly covered except on the base, none of the macrochætæ on this segment more than three-fourths as long as those on the third; apex of scutellum broadly yellow, third vein bearing two bristles at its base; length, 9 to 11 mm.

Beverly, Mass.; Hartford, Conn.; Virginia; Columbia, S. C.; Savannah, Ga.; Centerville, Fla.; northern Illinois; Tennessee; Waco and Paris, Tex., and San Jose, Cal. (Insecta Saundersiana, Vol. I, p. 283; 1856: *Tachina. Tachina obconica* Walker, loc. cit., p. 296. *Hemimasicera* sp., Brauer and Bergenstamm *in litt.*) ..... *albifrons* Walk.

Abdomen bearing discal macrochætæ on the second and third segments; black, the first two joints of the antennæ, palpi, and apex of scutellum, yellow; front of female almost as wide as either eye, frontal bristles descending beneath the arista, sides of face yellowish-white pollinose, vibrissæ on a level with front edge of the oral margin, ridges bristly on the lowest two-fifths, cheeks one-fifth as broad as the eye height; third joint of antennæ two and one-third times as long as the second, arista thickened on the basal half; thorax bluish-gray pollinose, marked with four black vittæ, four postsutural macrochætæ, scutellum bearing three long marginal pairs and a short apical one; abdomen subshining, thinly white pollinose; wings hyaline, tinged with yellowish at the base and along the costa, third vein bearing two or three bristles at the base, calypteres white; length, 9 mm. Seattle, Wash. One female... *occidentalis* n. sp.

Abdomen bearing discal macrochætæ, etc. Differs from *occidentalis* as follows: Coxæ, femora, and tibiæ, yellow; front of male one-half as wide as either eye, sides of face white pollinose, facial ridges bristly on the lowest fifth, third joint of antennæ four times as long as the second, arista thickened on the basal two-fifths, abdomen opaque gray pollinose, marked with olive-brown reflecting spots, wings not tinged with yellow; length, 9 mm. Florida. A single male specimen, collected by Mrs. A. T. Slosson ..... *australis* n. sp.

5. Second and third segments of abdomen destitute of discal macrochætæ, apex of abdomen and of scutellum yellow ..... 6.

Second, third, and fourth segments bearing discal macrochætæ, some on the fourth as long as those on the third, apex of abdomen and of scutellum black, third vein bearing three bristles at its base; length, 6.5 mm. Jacksonville, Fla. (Biol. Cent.-Am., Dipt., Vol. II, p. 105; March, 1890: *Masicera.*) ..... *strigata* v. d. W.

6. Cheeks one-sixth as broad as the eye height, frontal bristles not reaching to base of third joint of antennæ (see above under 3). *phyciodis* n. sp.

Cheeks one-ninth as broad as the eye height, frontal bristles descending below the arista, third vein bearing a single bristle near the base; black, the palpi, apex of scutellum, and sides and apex of abdomen, yellow; front of female three-fourths as wide as either eye, third joint of antennæ three and one-half times as long as the second, arista thickened on the basal fourth; otherwise as in the above description of *phyciodis*. A single female specimen

bred October 7, 1886, from *Harrisina americana*. Type No. 3611, U. S. National Museum ..... *harrisinæ* n. sp.

7. Middle tibiæ each bearing a single macrochæta on the front side near the middle. palpi, except sometimes the extreme apex, black ..... 8.

Middle tibiæ each bearing two or more macrochætæ on the front side near the middle, fourth segment of abdomen black ..... 10.

8. Third vein bearing a single bristle near its base ..... 9.

Third vein bearing two bristles near its base; black, including the palpi: front of female slightly narrower than either eye, frontal bristles descending to base of third antennal joint, hairs of front rather long and abundant, cheeks one-eighth as wide as the eye height, vibrissæ on a level with front edge of oral margin, ridges bristly on the lowest fifth, antennæ almost as long as the face, the third joint from twice to three and one fourth times as long as the second, arista thickened on the basal two-fifths, the penultimate joint as broad as long; thorax gray pollinose, marked with four black vittæ, scutellum bearing four marginal pairs of macrochætæ, that at the apex curving backward and nearly horizontal; abdomen shining, bases of last three segments whitish pollinose, second and third segments bearing marginal macrochætæ, the fourth covered except at base with much shorter ones than those on the third; wings hyaline, calypteres white; length, 5 mm. Tifton, Ga. Four female specimens collected October 1, 10, 15, and 17, by Mr. G. R. Pilate. Type No. 3612, U. S. National Museum ..... *pilatei* n. sp.

9. Fourth segment of abdomen wholly or largely yellow, its pollen golden yellow; length, 7 to 10 mm. Virginia; Tifton, Ga.; Mississippi; Palestine, Tex.; Carbondale, Ill.; Alameda County, Cal., and Kingston, Jamaica, West Indies. (Ausser. Zwei. Insekten, Vol. II, p. 334; 1830: *Tachina. Masicera protoparcis* Townsend, Journal Jamaica Institute, Vol. I, p. 70; 1892: from two cotype specimens.) ..... *distincta* Wied.

Fourth segment largely or wholly black, its pollen gray; length, 6 to 12 mm. District of Columbia; Carbondale, Ill.; Kirkwood, Mo.; Georgia; Mississippi; St. Louis, Mo.; Baton Rouge, La., and Colorado. (Biol. Cent.-Amer.. Diptera, Vol. II, p. 107; March, 1890: *Masicera. Argyrophylax* sp., Brauer and Bergenstamm *in litt.*) ..... *inquinata* v. d. W.

10. Second and third segments of abdomen destitute of discal macrochætæ ..... 11.

Second and third segments bearing discal macrochætæ, apical pair on the scutellum almost vertical, scutellum and palpi black, third antennal joint nearly four times as long as the second, third vein bearing a single bristle at its base; length, 7 mm. Colorado. (Trans. Amer. Ent. Soc., Vol. XVIII, p. 358; November, 1891: *Masicera.*) ..... *nigrita* Town.

11. Palpi yellow, the three uppermost frontal bristles in each row noticeably longer than the next ones .... 12.

Palpi, except the apices, black, the three uppermost frontal bristles not longer than those below them, no hairs below the lowest ones, vibrissæ on a level with front edge of the oral margin; black, the apices of palpi and of scutellum, yellow; no orbital nor ocellar bristles in the male, frontal bristles descending to base of third antennal joint, cheeks one-fifth as broad as the eye height, facial ridges bristly on the lowest fourth, antennæ nearly as long as the face, the third joint twice as long as the second, penultimate joint of arista slightly longer than broad; thorax gray pollinose, marked with four black vittæ, abdomen gray pollinose on the last three segments, with reflecting darker spots, the narrow hind margins of the segments shining black, hairs depressed, first three segments bearing marginal macrochætæ, wings hyaline, slightly tinged with yellow basally, third vein bearing two bristles at its base, fourth vein beyond the bend nearly straight, calypteres whitish; front pulvilli slightly longer than the last tarsal joint; length, 9 mm. Colorado. A single male specimen collected by Mr. Carl F. Baker. Type No. 3613, U. S. National Museum.....*bakeri* n. sp.

12. Front in the male as broad as, in the female one and one-fourth times as broad as, either eye, third joint of antennæ two and one-third times as long as the second, apical pair of macrochætæ on scutellum curving backward and nearly horizontal, vibrissæ noticeably above the level of front edge of the oral margin, arista thickened on the basal three-fifths; length, 11 mm. Horseneck Beach, Mass.; southern Illinois, and Florida. (Biol. Cent.-Amer., Diptera, Vol. II, p. 110; March, 1890: *Masicera.*) ....*fraudulenta* v. d. W.

Front in the male two-thirds, in the female four-fifths, as wide as either eye, third joint of antennæ four times as long as the second, arista thickened on the basal two-fifths, vibrissæ on a level with front edge of the oral margin, apical pair of macrochætæ on the scutellum curving forward and suberect; black, the palpi, and sometimes apex of scutellum and sides of the second abdominal segment, hind angles of the first and front angles of the third, yellow; frontal bristles descending slightly below the arista, sides of front bearing numerous bristly hairs and one or two macrochætæ, two pairs of orbital bristles in the female, none in the male, cheeks one-fifth as broad as the eye-height, facial ridges bristly on the lower half, the bristles ascending two-thirds or more of distance from the vibrissæ to the lowest frontal bristles, antennæ nearly as long as the face, penultimate joint of arista slightly longer than broad; thorax gray pollinose, marked with four black vittæ, abdomen on last

three segments gray pollinose, with reflecting black spots, second and third segments bearing marginal macrochætæ, the fourth wholly covered; front pulvilli of male longer than the last tarsal joint; wings hyaline, third vein bearing three or four bristles at the base, fourth vein beyond the bend arcuate, calypteres white; length, 10 mm. Pullman, Wash. Two males and three females bred by Prof. C. V. Piper from *Schizura ipomœæ*. Type No. 3614, U. S. National Museum..... *schizuræ* n. sp.

Genus MASICERA Macq.

Masicera Macquart, Histoire Naturelle Insectes, Dipteres, Vol. II, p. 118; 1835.
Ceromasia Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 71; 1856.
Dexodes Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 87; 1889.
Hemimasicera Brauer and Bergenstamm, loc. cit.

The last-named authors place Dexodes and Hemimasicera as subgenera of Ceromasia, and retain Masicera as a distinct genus.[1] A comparison of species placed by these authors in both of these so-called genera shows that they are too closely related to be separated into different genera:

1. Thorax bearing four postsutural macrochætæ, two or more on front side of each middle tibia near the middle, apex of abdomen black ..... 2.

   Thorax bearing only three postsutural and three sternopleural macrochætæ, second and third abdominal segments bearing discal as well as marginal ones ..... 4.

2. Second and third segments of abdomen bearing discal macrochætæ, apical pair on scutellum nearly horizontal ..... 3.

   Second and third segments destitute of discal macrochætæ; black, the second antennal joint, palpi and usually the scutellum except the base, yellow; front of female one and one-fourth times as wide as either eye, two pairs of orbital bristles, hairs on sides of front short and sparse, frontal bristles descending to base of third antennal joint, cheeks over one-fourth as broad as the eye-height, facial ridges bristly on the lowest third to half, antennæ five-sixths as long as the face, the third joint three times as long as the second, arista thickened on the basal three-fifths, the penultimate joint shorter than broad; thorax gray pollinose, marked with four black vittæ, four sternopleural macrochætæ, scutellum bearing two long and two short pairs of marginal ones, the apical pair almost erect; abdomen on last three segments gray pollinose, their apices sometimes shining, the bristly hairs depressed; wings hyaline, third vein bearing two bristles at its base, hind crossvein and the fourth vein beyond the bend almost straight; calypteres white; length, 5 mm. Atlanta, Ga.,

[1] Zweif. Kais. Mus. Wien, VI, pp. 211, 212; 1893.

and Los Angeles Co., Cal. Two females collected by the writer. Type No. 3615, U. S. National Museum ..... *pauciseta* n. sp.

3. With only three sternopleural macrochætæ, palpi yellow, third vein bearing from three to six bristles at its base; length, 8 to 10 mm. New Hampshire; and Austria. Two males and one female from Austria received from Brauer and Bergenstamm and by them labeled *Ceromasia florum* Macq.; these authors state that this is a synonym of *festinans* Meig., after examining the type of the latter.[1] (System. Besch. Eur. Zweif. Insekten, Vol. IV, p. 384; 1824: *Tachina. Masicera florum* Macquart, Annales Soc. Ent. France, p. 460; 1850.) ..... *festinans*[2] Meig.

With four sternopleural macrochætæ, palpi black, third vein bearing a single bristle at its base; length, 8 to 10 mm. Canada; Mass.; Illinois, and England. A specimen of each sex from England, received from E. Brunetti and by him labeled *Masicera myoidæa*. (Essai sur les Myodaires, p. 114; 1830: *Lydella.*) *myoidæa* Desv.

4. Middle tibiæ each bearing a single macrochæta on the front side near the middle, third vein bearing three bristles at its base .. 5.

Middle tibiæ each bearing two or more macrochætæ on the front side near the middle, palpi yellow ..... 6.

5. Palpi, legs, and abdomen, black; body slender, subshining; length, 5.5 to 6 mm. Mass., and Colorado. (Trans. Amer. Ent. Soc., Vol. XIX, p. 285; December, 1892.) .... *tenthredinidarum* Town.

Palpi, femora, tibiæ, and apex of fourth segment of abdomen, yellow; body quite robust, opaque; black, the first two joints of antennæ, palpi, apex of proboscis, femora, tibiæ, and apex of fourth segment of abdomen, yellow; front of male one-half as wide as either eye, no orbital bristles, hairs on sides of front short and sparse, frontal bristles descending to base of third antennal joint, cheeks one-fourth as broad as the eye-height, facial ridges bristly on the lower two-thirds, antennæ almost reaching the oral margin, the third joint three and one-third times as long as the second, arista thickened on the basal fourth; thorax gray pollinose and marked with four black vittæ, scutellum bearing three pairs of long marginal and a short apical pair of macrochætæ; abdomen on the first three segments subopaque gray pollinose, its hairs suberect and rather long; wings hyaline, the base tinged with gray, costal spine as long as crossvein at base of discal cell, hind crossvein nearly straight, fourth vein beyond the bend strongly concave, closing or almost closing the apical cell, calypteres white; front pulvilli slightly longer than the last

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[1] Zweif. Kais. Mus. Wien, V, p. 428; 1891.

[2] Front one and one-half width of eye, cheeks three-eighths the eye-height, arista thickened on basal two-thirds ..... *festinans.*

Front of male two-thirds, of female five-sixths, width of eye, cheeks one-fifth the eye-height, arista thickened on basal two-fifths, otherwise as in *festinans*. N. J., Va, and La ..... *celer* n. sp.

tarsal joint; length, 8 to 10 mm. Tifton, Ga., and Florida. Two male specimens. Type No. 3616, U. S. National Museum. *pulverea* n. sp.

6. Third vein bristly at least three-fourths of distance from the base to the small crossvein ..... 7.

Third vein bristly at most one-third of this distance, entire abdomen black; length, 6 to 11 mm. Grimsby, Canada; Mount Washington and Franconia, N. H.; Maryland; District of Columbia; northern Illinois, and Santa Cruz Mountains, Cal. (Trans. Amer. Ent. Soc., Vol. XIX, p. 286; Dec., 1892.) ..... *eufitchiæ* Town.

7. Fourth and other segments of abdomen black; black, the palpi yellow; front of male three-fourths as wide as, of the female slightly wider than, either eye; two pairs of orbital bristles in the female, none in the male; sides of front and face white pollinose, cheeks over one-third as broad as the eye height, facial ridges bristly on the lowest third, antennæ five-sixths as long as the face, the third joint one and three-fourths times as long as the second, arista thickened on the basal half, the penultimate joint shorter than broad; thorax thinly whitish pollinose, marked with four black vittæ, scutellum bearing three pairs of long marginal and a short apical pair of macrochætæ, abdomen shining, bases of the last three segments thinly whitish pollinose, venter not carinate in either sex; front pulvilli longer than the last tarsal joint; wings hyaline, the base tinged with gray, hind crossvein strongly curved, situated nearly midway between the small crossvein and the bend, calypteres white; length, 7 to 9 mm. White Mountains, New Hampshire. Four males and five females, collected by the late H. K. Morrison. Type No. 3617, U. S. National Museum ..... *chætoneura* n. sp.

Fourth segment of abdomen of female on the apical half yellow, her venter carinate, sides of front and face in both sexes deep golden yellow pollinose, third joint of antennæ two and one-third times as long as the second; length, 5 to 9 mm.; otherwise as in the above description of *chætoneura*. Mount Washington and White Mountains, New Hampshire. One male and two females, one from the former locality collected by Mrs. A. T. Slosson, the others by the late H. K. Morrison. Type No. 3618, U. S. National Museum ..... *aurifrons* n. sp.

Unrecognized species.—*M.(?) fulvipalpis* Bigot, Ann. Soc. Ent. France, p. 263; 1888: Rocky Mountains.

Genus ACEMYIA Desv.

Acemya Desvoidy, Essai sur les Myodaires, p. 202; 1830.
Agculocera Macquart, Annales Société Ent. France, p. 24; 1855.

The above synonymy was first determined by Rondani[1] from an examination of a typical specimen received from Macquart, and is

[1] Dipterologiæ Italicæ Prodromus, Vol. IV, p. 81; 1861.

repeated by Brauer and Bergenstamm.[1] Two species occur in our fauna, and in each there are three postsutural and two or three sternopleural macrochætæ:

Tibiæ and antennæ, except sometimes apex of second joint, black; apical cell closed, frontal bristles descending beneath base of second antennal joint; length, 6 to 7 mm. Beverly, Mass.; Tifton, Ga.; Georgetown, Fla.; Mobile, Ala.; Agricultural College, Miss.; St. Louis, Mo., and Los Angeles County, Cal. (Proc. Acad. Nat. Sci. Philadelphia, p. 311; Sept., 1895.) . . . *dentata* Coq.

Tibiæ and second antennal joint yellow, apical cell open, frontal bristles not descending to base of second antennal joint; black, the palpi, apex of proboscis, first two joints of antennæ, trochanters, apices of femora, and whole of tibiæ yellow; front of female as broad as either eye, the sides brownish gray pollinose, two pairs of orbital bristles, face white pollinose; antennæ reaching slightly below middle of face, the third joint one and one-half times as long as the second, arista thickened on the basal fourth, vibrissæ inserted three-fourths the length of the third antennal joint above the oral margin, two or three bristles above each, cheeks one-fifth as broad as the eye height; thorax gray pollinose, marked with four black vittæ; abdomen gray pollinose, a black dot at base of each hair, the hairs depressed, a marginal pair of macrochætæ on the second segment and a marginal row on the third and fourth; wings hyaline, third vein bearing one or two bristles near the base, the others bare, apical crossvein nearly straight, bend of fourth vein forming an obtuse angle; calypteres whitish; length, 4 mm. Santa Cruz Mountains, California. A single female specimen, collected by A. Koebele. Type No. 3620, U. S. National Museum . . *tibialis* n. sp.

Genus PSEUDOCHÆTA Coq.

Pseudochæta Coquillett, Proc. Acad. Nat. Sci. Philadelphia, p. 309; Sept., 1895.

Our species have two or three pairs of backwardly curving macrochætæ on the sides of the front in both sexes, and with two pairs of forwardly directed orbital bristles in the female, wanting in the male; four postsutural macrochætæ:

With only two sternopleural macrochætæ; black, including the palpi; third joint of antennæ in the male five, in the female three, times as long as the second; length, 5 to 7 mm. From the type specimen. Northern Illinois; Tifton, Ga.; Charlotte Harbor, Florida, and Santa Barbara County, Cal. (Proc. Acad. Nat. Sci. Phila., p. 310; Sept., 1895.) . . . . . *argentifrons* Coq.

With four sternopleural macrochætæ; black, the apex of scutellum, sides of second segment of abdomen, hind corners of the first and front corners of the third, yellow; front of female scarcely as wide as either eye, the sides and face silvery pollinose, frontal vitta

[1] Zweif. des Kais. Museum zu Wien, VI, p. 226; 1893.

obliterated in front of the middle by the meeting of the sides of the front, frontal bristles descending to the arista, cheeks one-tenth as broad as the eye height, vibrissæ inserted on a level with the front edge of the oral margin, facial ridges bristly on the lower three-fourths, antennæ almost as long as the face, the third joint six times as long as the second, arista thickened on the basal half, the penultimate joint slightly longer than broad; thorax gray pollinose, marked with four black vittæ; scutellum bearing two pairs of long and one of short marginal, also a short apical pair, of macrochætæ; abdomen subshining, last three segments thinly gray pollinose and with dark reflecting spots, the bristly hairs rather long, those in middle of dorsum suberect, second and third segments bearing only marginal macrochætæ; wings hyaline, third vein bearing two or three bristles near its base; calypteres white; middle tibiæ each bearing two or more macrochætæ on the front side near the middle, hind tibiæ evenly ciliate outwardly; length, 7 mm. District of Columbia. A single female specimen bred from a Pyralid found upon oak. Type No. 3622, U. S. National Museum.....*pyralidis* n. sp.

Genus PROSPHERYSA v. d. W.

Prospherysa van der Wulp, Biol. Cent.-Am., Diptera, Vol. II, p. 116; May, 1890.
Dexiophana Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 374; 1891.

Our single species is black, the apex of the proboscis and of the fourth segment of the abdomen, yellowish; three postsutural and three sternopleural macrochætæ, scutellum bearing three pairs of long marginal and a short apical pair, second and third segments of abdomen bearing discal and marginal, middle tibiæ each bearing two on the front side near the middle; length, 9 mm. Anglesea, N. J. (Biologia Cent.-Amer., Diptera, Vol. II, p. 117; May, 1890.) ...*æmulans* v. d. W.

Genus VANDERWULPIA Town.

Vanderwulpia Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 381; Dec., 1891.

Our two species have the antennal arista thickened to the middle and clothed with a pubescence which at the most is only slightly longer than its greatest diameter; three postsutural macrochætæ:

Abdomen reddish yellow; remainder of insect, except palpi and apex of proboscis, black; calypteres white, wings hyaline, anterior veins bordered with smoky, petiole of apical cell over one-half as long as the hind crossvein; length, 7 mm. Las Cruces, N. Mex. (Trans. Amer. Ent. Soc., Vol. XVIII, p. 381; December, 1891.).....*atrophopodoides* Town.

Abdomen and entire insect except palpi and lower part of face, black, calypteres and wings as in the preceding species, petiole of apical cell less than one-sixth as long as the hind crossvein; length, 10 mm. Texas. (Canadian Entomologist, Vol. XXIV, p. 172; July, 1892.).....*sequens* Town.

Genus HOUGHIA, new genus.

The characters of this genus may be gleaned from the table of genera given on previous pages, and the following description of the type species: Black, the palpi and apex of proboscis yellow; front of female five-sixths as wide as either eye, frontal bristles descending almost to middle of second antennal joint, two pairs of orbital bristles and two pairs of backwardly curving macrochætæ outside of the frontal bristles, cheeks one-twelfth as broad as the eye-height, four or five bristles above each vibrissæ, antennæ almost as long as the face, the third joint from four to five times as long as the second, arista thickened on the basal two-fifths, the penultimate joint broader than long; thorax gray pollinose, marked with four black vittæ, four postsutural and three sternopleural macrochætæ, scutellum bearing three long marginal pairs and a very short apical pair; abdomen shining, the last three segments except their apices whitish pollinose, each segment bearing marginal macrochætæ; middle tibiæ each bearing a single macrochæta on the front side near the middle, hind tibiæ outwardly subciliate; wings hyaline, first vein bristly except on its base and apex, third vein bristly almost to the small crossvein, hind crossvein at last third of distance from the small to the bend of the fourth, the latter not appendiculate, calypteres whitish; length, 6 to 7 mm. Tifton, Ga. Two females collected June and September 1, 1896, by Mr. G. R. Pilate, and transmitted by Dr. Garry deN. Hough, after whom the genus is named. Type No. 3623, U. S. National Museum.....*setipennis* n. sp.

Genus TACHINA Meig.

Tachina Meigen, in Illiger's Magazin für Insektenkunde, Vol. II, p. 280; 1803.
Eutachina Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 98; 1889.
Chætotachina Brauer and Bergenstamm, loc. cit.
Tachinomyia Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 96; April, 1892.

Eutachina was proposed for Tachina under the mistaken idea that the latter is identical with the genus Echinomyia. Chætotachina is given by its authors as a subgenus of Eutachina.[1] The synonymy of Tachinomyia is by the writer and is based on a cotype specimen of the type species. Our species have three sternopleural macrochætæ, and two or more on the front side of each middle tibia near the middle:

1. Apices of last three segments of abdomen shining black, tip of abdomen black, genitalia not or only slightly projecting beyond the tip of the fourth segment, frontal bristles descending on sides of face nearly halfway to the vibrissæ, facial ridges bristly almost to the lowest frontal bristles..... 2.

   Apices of last three segments of abdomen usually opaque gray pollinose, apex of scutellum and of abdomen usually yellow, genitalia of male projecting more than half the length of the

[1] Zweif. Kais. Mus. Wien, VI, p. 125; 1893.

fourth segment in the form of a claw, frontal bristles seldom descending on sides of face more than one-third of the distance to the vibrissæ, facial ridges bristly about three-fifths of distance from the vibrissæ to the lowest frontal bristles; length, 6 to 14 mm. Toronto, Canada; Franconia, N. H.; Springfield, Mass.; Clementon, N. J.; Ithaca, N. Y.; northern Illinois; Ames, Iowa; Cadet, Mo.; Brookings, S. Dak.; Colorado; Pullman, Wash.; Oregon, and California. (Trans. Amer. Ent. Soc., Vol. XIX, p. 96; April, 1892: *Tachinomyia:* from a cotype specimen. *Prosphersysa similis* Williston, North American Fauna, No. 7, p. 256; May 31, 1893: from a cotype specimen.) ..... *robusta* Town.

2. Thorax bearing four postsutural macrochætæ, second and third segments of abdomen destitute of discal ones; length, 6 to 13 mm. Toronto, Canada; Franconia, N. H.; Massachusetts; New York, N. Y.; District of Columbia; West Virginia; Tifton, Ga.; Florida; Onaga, Kans.; Texas; Las Cruces, N. Mex.; West Cliff, Colo.; Evanston, Wyo.; Pullman, Wash.; Oregon, and California. (List of Dipterous Insects, Part IV, p. 767; 1849. *Tachina panætius* Walker, loc. cit. *Tachina pansa* Walker, loc. cit., p. 787. *Podotachina americana* Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 351; 1891. *Tachina clisiocampæ* Townsend, Psyche, Vol. VI, p. 83; May, 1891. *Tachina orgyiæ* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 284; December, 1892. *Achætoneura fernaldi* Williston, in Forbush and Fernald's The Gypsy Moth, p. 387; 1896. *Eutachina* sp., Brauer and Bergenstamm *in litt.*) ..... *mella* Walk.

Thorax bearing only three postsutural macrochætæ, second and third segments of abdomen bearing discal macrochætæ; length, 7 to 10 mm. Toronto, Canada; White Mountains and Franconia, N. H.; Colorado; Washington; Los Angeles County, Cal.; Germany, and Austria. Two males and two females from Austria, received from Brauer and Bergenstamm and by them labeled *Chætotachina rustica* Meig.; also three males and two females from Germany, received from Zeller and by him labeled *Tachina larvarum.* (Diptera Sueciæ, Muscidæ, p. 5; 1820. The following synonymy is by Rondani in Dipt. Ital., Vol. III, p. 200; 1859, and is repeated by Schiner in Faun. Aus., Vol. I, pp. 474, 475; 1862: *Tachina vittata* Macquart, Annales Soc. Entom. France, p. 377; 1854; also *flavipalpis*, p. 382; *ludibunda* and *rectinervis*, p. 383; *audens*, p. 385; *flavifrons*, p. 386; *pumila*, p. 387; *albifrons*, p. 389; and *alacer*, p. 390. The following is by the writer: *Tachina spinosula* Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 353; November, 1891. *Tachina tenthredinivora* Townsend, loc. cit., Vol. XIX, p. 285; December, 1892. *Chætotachina* sp., Brauer and Bergenstamm *in litt.*) .... *rustica* Fallen.

Unrecognized species.—*T.*(?) *hybreas* Walker; Brit. Amer.

Genus TACHINOPSIS, new genus.

The following is a description of the type species: Black, the frontal vitta, first two joints of antennæ, and the palpi yellow; front of male two-thirds as wide as either eye, frontal bristles descending slightly below the arista, no orbital bristles, hairs on sides of front short and sparse, cheeks one-sixth as broad as the eye height, vibrissæ on a line with front edge of oral margin, ridges bristly on the lower three-fourths, antennæ six-sevenths as long as the face, third joint three and one half times as long as the second, arista thickened on the basal two-fifths, the penultimate joint nearly as broad as long, thorax gray pollinose, marked with four black vittæ, four postsutural and three sternopleural macrochætæ; scutellum bearing four marginal pairs; abdomen shining, bases of last three segments opaque gray pollinose, first three segments bearing marginal macrochætæ only; front pulvilli as long as the last tarsal joint, middle tibiæ each bearing two macrochætæ on the front side near the middle, hind tibiæ outwardly subciliate; wings hyaline, third vein bearing three bristles near its base, hind crossvein slightly beyond the middle between the small and the bend, last section of fifth vein almost as long as the preceding section; calypteres white; length, 7 mm. Washington. A single male specimen collected by Prof. O. B. Johnson. Type No. 3624, U. S. National Museum..... *mentalis* n. sp.

Genus EUTHERA Loew.

Euthera Loew, Diptera Amer. Septentrionalis Indig., Cent. VII, No. 85; 1864.

Our single species is black, the frontal vitta, middle of face, lower part of head, the palpi, and femora yellow; wings brown on the costal edge beyond the humeral crossvein, along the last two sections of the fifth vein, a fascia from costa over the hind crossvein and including the small crossvein, finally a fascia which fills the apex of the apical cell; length, 7 mm. Pottstown, Pa., and Tifton, Ga. (Loc. cit.). *tentatrix* Loew.

Genus DEMOTICUS Macq.

Demoticus Macquart, Annales Soc. Ent. France, p. 442; 1854.

1. Femora largely or wholly black..... 3.
   Femora and tibiæ yellow; three postsutural and three sternopleural macrochætæ..... 2.
2. Third vein bristly at least one-third of the distance from base to small crossvein, front of male five-sixths as wide as either eye, thorax, except the humeri, and the tarsi black; length, 9 to 11 mm. Philadelphia, Pa.; Colorado; California, and Washington. (Canadian Entomologist, Vol. XXVII, p. 127; May, 1895: *Drepanoglossa.*)..... *venatoris* Coq.

Third vein bearing only two bristles at the base, front of the male one and one-half times as wide as either eye; yellow, the third antennal joint, proboscis, center of dorsum of thorax, three spots on the pleura, and a dorsal spot on the third and fourth segments of the abdomen black; frontal bristles descending almost to apex of second antennal joint, third antennal joint twice as long as the second, arista thickened on the basal third, cheeks nearly one-half as wide as the eye height, proboscis slender, rigid, labella very small; second and third segments of abdomen bearing marginal macrochætæ, the fourth covered except on the basal third; wings hyaline, calypteres white; front pulvilli slightly shorter than the last tarsal joint; length, 11 mm. Denver, Colo. A single male specimen. Type in U. S. National Museum ..... *pallidus* n. sp.

3. Scutellum yellow, four postsutural and four sternopleural macrochætæ; black, the first two joints of the antennæ, the palpi, scutellum, and sides of the last three abdominal segments, also the apex of the fourth, yellow; front in female slightly wider than either eye, frontal bristles descending almost to tip of second antennal joint, antennæ nearly three-fourths as long as the face, the third joint one and one-fourth times as long as the second, arista thickened on the basal three-fifths, the penultimate joint one and one-half times as long as wide; head at base of antennæ slightly shorter than on its lower edge, vibrissæ inserted about half the length of the second antennal joint above the oral margin, three or four bristles above each; thorax gray pollinose, marked with four black vittæ; scutellum bearing four pairs of rather long marginal macrochætæ; abdomen thinly gray pollinose, second segment bearing a pair of marginal macrochætæ, the third bearing a marginal row, the fourth covered except on the basal fifth; middle tibiæ each bearing two long macrochætæ on the front side near the middle, the hind tibiæ outwardly subciliate; wings hyaline, third vein bearing about four bristles near its base, the others bare, apex of third vein midway between tip of second and the extreme wing tip, hind crossvein at last third of distance from the small to the bend, the latter not appendiculate; calypteres white; length, 8 mm. Siskiyou Co., Cal. A female specimen bred from *Melitæa palla* by A. Koebele. Type No. 3626, U. S. National Museum. *melitææ* n. sp.

Scutellum black, probably four postsutural macrochætæ, but the anterior pair is wanting in the type specimen, four sternopleurals; black, the palpi, sides of first three segments of abdomen except the front corners, tibiæ, and apical third of under side of each femur yellowish; front of male one-half as wide as either eye, no orbital bristles, frontals descending to middle of second joint of antennæ, cheeks one-third as broad as the eye-

height, vibrissæ slightly above the level of front edge of oral margin, five or six bristles above each; antennæ five-sixths as long as the face, the third joint one and three-fourths times as long as the second, arista thickened on the basal two-fifths, the penultimate joint as broad as long, palpi linear, proboscis rigid, labella small but distinct; thorax gray pollinose, marked with five black vittæ, scutellum bearing five pairs of marginal macrochætæ; abdomen gray pollinose except the apices of the last three segments, first segment bearing marginal, the following two with discal and marginal macrochætæ; middle tibiæ each bearing two or more on the front side near the middle, hind tibiæ outwardly subciliate, front pulvilli longer than the last tarsal joint; wings hyaline, third vein bearing three bristles at the base, fourth vein rounded at the bend, beyond which it is nearly straight until a short distance before its apex, where it is strongly arcuate; calypteres white, margined with yellow; length, 13 mm. Blue Mountains, Washington. A single male specimen, collected July 15, 1896, by Prof. C. V. Piper. Type No. 3627, U. S. National Museum.....*piperi* n. sp.

Genus PARAPHYTO Coq.

Paraphyto Coquillett, Journal N. Y. Ent. Soc., Vol. III, p. 105; Sept., 1895.

1. First two segments of abdomen destitute of dorsal macrochætæ, scutellum bearing three marginal pairs, three postsuturals and two sternopleurals, third vein bristly about halfway to the small crossvein ..... 2.

   First two segments bearing dorsal, the second and third with discal and marginal macrochætæ, scutellum bearing five marginal pairs, four postsuturals and three sternopleurals, third vein bristly on the basal eighth before the small crossvein, abdomen subshining, thinly whitish pollinose, destitute of distinct black spots; black, including the palpi, the face and cheeks largely reddish; length, 13 mm. Laggan, Brit. Amer. (Can. Entomologist, Vol. XXIV, p. 68; March, 1892: *Trixa.*)....*gillettei* Town.

2. Abdomen subshining, thinly gray pollinose, destitute of distinct black spots; black, the first two joints of antennæ, facial depression, and palpi yellow; abdomen sometimes largely brownish-red; length, 11 to 13 mm. Ithaca, N. Y., and Agricultural College, Michigan. (Journal N. Y. Ent. Soc., Vol. III, p. 105; Sept., 1895.) .....*chittendeni* Coq.

   Abdomen opaque gray pollinose, marked with three rows of shining black spots; black, the first two joints of antennæ, facial depression, and palpi yellow; front of female one and one-fourth times as wide as either eye, two pairs of orbital bristles, frontal bristles not descending below base of antennæ, sides of face at narrowest part each two-fifths as wide as the facial depression,

hairy one-half the distance from the lowest frontal bristle to the vibrissæ, the latter inserted slightly above the anterior edge of the oral margin, facial ridges bristly on the lowest sixth; antennæ three-fourths as long as the face, the third joint one and one-half times as long as the second, arista pubescent, thickened on the basal two-fifths, the penultimate joint shorter than broad, cheeks almost as wide as the eye height; thorax opaque gray pollinose, marked with three black vittæ; wings hyaline, calypteres white; length, 12 mm. Colorado; and Mesilla, N. Mex. Three female specimens, captured by Carl F. Baker and T. D. A. Cockerell. Type No. 3584, U. S. National Museum.....*opaca* n. sp.

Genus **PARACHÆTA**, new genus.

The principal characters of this genus have been given in the table of genera published on previous pages. The type species is black, the first two joints of antennæ, palpi, hind corners of thorax, and the scutellum yellow; sides of first three segments of abdomen sometimes tinged with yellowish; front of male one-half as wide as either eye, destitute of orbital bristles, frontal bristles descending to base of third antennal joint, cheeks one-fourth as wide as the eye height, vibrissæ inserted one-third the length of the second antennal joint above the anterior edge of the oral margin, facial ridges bristly on the lower two-thirds to three-fourths; antennæ four-fifths as long as the face, the third joint one-third as long as the second, arista thickened on the basal half, the penultimate joint scarcely longer than broad; thorax thinly gray pollinose, marked with four black vittæ, four postsutural and three sternopleural macrochætæ, scutellum bearing four pairs of long marginal; abdomen shining, destitute of pollen, no macrochætæ on the first two segments, only a marginal row on the third; hind tibiæ densely ciliate with scale-like bristles; wings hyaline, the bases brownish, calypteres brown; length, 13 mm. Ithaca and New York, N. Y. (Diptères Exotiques, Supplement I, p. 158; 1846: *Blepharipeza*. *Blepharipeza inermis* Bigot, Annales Soc. Ent. France, p. 91; 1888.) .....*bicolor* Macq.

Genus **BLEPHARIPEZA** Macq.

Blepharipeza Macquart, Diptères Exotiques, Vol. II, Part II, p. 211 (54); 1843.
Rileya Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, VI, p. 121; 1893. (*Non* Ashmead, Entomologica Americana, Vol. IV, p. 42; June, 1888. *Non* Howard, loc. cit., p. 80; July, 1888.)
Rileymyia Townsend, Entomological News, Vol. IV, p. 277; October, 1893.

The latter name was proposed to take the place of Rileya, which is preoccupied in the Hymenoptera. A comparison of specimens of *Rileya americana* (the type species of this genus), identified by Brauer and Bergenstamm, with specimens of *Blepharipeza leucophrys* (the type species of the latter genus), fails to disclose any difference of generic

value. Our two species have four postsutural and three sternopleura macrochætæ:

Abdomen wholly black; length, 11 to 13 mm. Franconia, N. H., and Washington. (Aussereuropäische Zweif. Insekten, Vol. II, p. 308; 1830: *Tachina. Blepharipeza rufipalpis* Macquart, Dipt. Exot., Vol. II, Part II, p. 212 (55); 1843. *Tachina latifrons* Walker, Insecta Saundersiana, p. 284; 1856.) ..... *leucophrys* Wied.

Abdomen reddish yellow, a black dorsal vitta; length, 10 to 14 mm. Toronto, Canada; Oswego and New York, N. Y.; Colorado, and California. (Diptera Amer. Septen. Indigena, Centuria X, No. 67; 1872. *Blepharipeza fulvipes* Bigot, Ann. Soc. Entomol. France, p. 92; 1888. *Blepharipeza exul* Townsend, Canadian Entomologist, Vol. XXIV, p. 64; March, 1892. *Blepharipeza rufescens* Townsend, Trans. Am. Ent. Soc., Vol. XIX, p. 90; April, 1892. *Rileya americana* Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, VI, p. 204; 1893: also *in litt.*) .... *adusta* Loew.

Genus WINTHEMIA Desv.

Winthemia Desvoidy, Essai sur les Myodaires, p. 173; 1830.
Chetoliga Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 66; 1856.

This synonomy has already been published by Brauer and Bergenstamm.[1] Desvoidy (loc. cit.) gives the *Musca quadripustulata* Fabr. as the type of Winthemia; and this species is included by Rondani in his genus Chetoliga (loc. cit., Vol. III, pp. 105 and 108):

1. Thorax bearing four postsutural and two sternopleural macrochætæ ..... 2.

Thorax bearing three postsutural and three sternopleural macrochætæ; black, the palpi yellow, frontal vitta dark brown; front in male slightly broader than either eye; antennæ six-sevenths as long as the face, third joint nearly three times as long as the second, arista thickened nearly to the middle, cheeks one-sixth as broad as the eye height; thorax gray pollinose, marked with four black vittæ; scutellum bearing four marginal pairs of macrochætæ, of which the second and apical pairs are shorter than the others; abdomen wholly gray pollinose, the bristly hairs rather long and suberect, second segment bearing a marginal pair, the third a marginal row of macrochætæ, those on the fourth segment scarcely longer than the bristly hairs; hind tibiæ outwardly ciliate and with a much longer bristle near the middle, front pulvilli as long as the last tarsal joint; wings hyaline, fourth vein beyond the bend almost straight; calypteres white; length, 7 mm. Maryland. A single male specimen, collected by the writer in June. Type No. 3628, U. S. National Museum ..... *obscura* n. sp.

[1] Zweif. Kais. Mus. Wien, VI, p. 239; 1893.

2. Palpi, scutellum, and apex of abdomen, black; third antennal joint in the female three times as long as the second, hind tibiæ outwardly near the middle bearing a bristle which is nearly twice as long as the adjacent ones; length, 7 mm. Los Angeles County, Cal. (Ann. Soc. Entomol. France, p. 258; 1888: *Chætolyga.*) ..... *nigrifacies* Bigot.

Palpi, scutellum, and apex of abdomen, yellowish; third antennal joint in the female about twice as long as the second, no longer bristles on outer side of the hind tibiæ near the middle; females usually with a marginal pair of macrochætæ on the second abdominal segment, which is generally wanting in the males; length, 6 to 12 mm. London, Canada; White Mountains and Franconia, N. H.; Agawam, Mass.; Delaware County, Pa.; Ithaca, N. Y.; Chester, Pa.; District of Columbia; Portsmouth, Va.; Shreveport, La.; Illinois; Agricultural College, Mich.; St. Louis, Mo.; Washington, and Germany. Four males from Germany received from Zeller and by him labeled *Nemoræa 4-pustulata.* (Entom. Systematica, Vol. IV, p. 324; 1794: *Musca.* The following synonymy is by Schiner in Faun. Austriaca, Vol. I, p. 454: *Winthemia cinerea* Desvoidy, Ann. Soc. Entomol. France, p. 270; 1847. The following is by the writer: *Exorista leucaniæ* Kirkpatrick, Ohio Agricultural Report for 1860, p. 757; 1861. The following is given in Osten Sacken's Catalogue: *Exorista ostensackenii* Kirkpatrick, loc. cit. *Senometopia militaris* Walsh, Trans. Ill. State Agric. Soc., Vol. IV, p. 367; September, 1861. The following is by the writer: *Exorista cecropiæ* Riley MS., from the proposed type specimen. *Tachina deilephilæ* Osten Sacken, Canadian Entomologist, Vol. XIX, p. 164; September, 1887. *Exorista infesta* Williston, in Fourteenth Report State Ent. Illinois, p. 65; 1885. *Chætolyga rufonotata* Bigot, Ann. Soc. Entomol. France, p. 257; 1888. *Chætolyga rufopicta* Bigot, loc. cit., p. 259. *Exorista ciliata* Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 363; Dec., 1891. *Exorista platysamiæ* Townsend, loc. cit., Vol. XIX, p. 288; Dec., 1892. *Exorista datanæ* Townsend, loc. cit. *Chætolyga deilephilæ* O. S., Brauer and Bergenstamm *in litt.*) ..... *quadripustulata* Fabr.

Genus **MUSCOPTERYX** Town.

Muscopteryx Townsend, Canadian Entomologist, Vol. XXIV, p. 170; July, 1892.

Our species is black, including the palpi; three postsutural and three sternopleural macrochætæ; length, 9 mm. Missouri. (Loc. cit, p. 171.) *chætosula* Town.

Genus PARADIDYMA Br. and Berg.

Paradidyma Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 382; 1891.
Atrophopoda Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 373; December, 1891.
Lachnomma Townsend, loc. cit., Vol. XIX, p. 103; May, 1892.

The synonymy of Lachnomma with Paradidyma is given with a query by Brauer and Bergenstamm.[1] In the Trans. Amer. Ent. Soc. for 1895, page 77, Mr. Townsend suggests that the supposed type species of his two genera, Atrophopoda and Lachnomma, are but the opposite sexes of one and the same species, and the specimens in the National Museum fully establish the accuracy of this supposition. Our single species is black, the palpi and apex of proboscis yellowish; three postsutural and three sternopleural macrochætæ; length, 6 to 9 mm. Springfield, Mass.; northern Illinois; District of Columbia; Georgia; Agricultural College, Miss.; Texas; Custer County, Colo.; Las Cruces, N. Mex.; and Kern County, Cal. (Trans. Amer. Ent. Soc., Vol. XVIII, p. 374; December, 1891: *Atrophopoda. Lachnomma magnicornis* Townsend, loc. cit., Vol. XIX, p. 104; May, 1892. ?Paradidyma sp., Brauer and Bergenstamm *in litt.*) ..... *singularis* Town.

Genus ATROPHOPALPUS Town.

Atrophopalpus Townsend, Entomological News, Vol. III, p. 130; June, 1892.

Our single species is black, the palpi yellowish; three postsutural and two sternopleural macrochætæ; length, $4\frac{2}{3}$ to 7 mm. Lake Worth, Fla. (Loc. cit., p. 131.) ..... *angusticornis* Town.

Genus METACHÆTA Coq.

Metachæta Coquillett, Journal N. Y. Ent. Soc., Vol. III, p. 98; September, 1895.

Our single species is black, the palpi and apex of proboscis yellow; body not pollinose; three postsutural and two sternopleural macrochætæ; length, 4 to 5 mm. From the type specimen. Toronto, Canada; Franconia, N. H.; northern Illinois; Colorado, and Santa Cruz Mountains, California. (List of Dipterous Insects, Part IV, p. 795; 1849: *Tachina. Metachæta atra* Coquillett, Journal N. Y. Ent. Soc., Vol. III, p. 99; September, 1895.) ..... *helymus* Walk.

Genus PHORICHÆTA Rond.

Scopolia Desvoidy, Essai sur les Myodaires, p. 268; 1830. (*Non* Huebner; 1816.)
Phorichæta Rondani, Dipterologiæ Italicæ Prodromus, Vol. IV, p. 8; 1861.

The latter name was proposed to take the place of Scopolia, which is preoccupied in the Lepidoptera. Our species has the sides of the front and the body shining black, and destitute of pollen; three postsutural and two or three sternopleural macrochætæ; wings hyaline, the veins and crossveins sometimes bordered with brown; length 4 to 6 mm.

[1] Zweif. Kais. Mus. Wien, VI, p. 193; 1893.

White Mountains and Franconia, N. H.; Beverly, Mass.; northern Illinois; Colorado; British Columbia; Easton, Wash., and Placer and Los Angeles counties, Cal. (In Cook's Notes on Injurious Insects, p. 5; 1884: *Scopolia.*) ..... *sequax* Will.

Unrecognized species.—P.? (*Scopolia*) *lateralis* Macquart; America (probably South America).

Genus CHÆTOPLAGIA Coq.

Chætoplagia Coquillett, Journal N. Y. Ent. Soc., Vol. III, p. 98; September, 1895.

Our single species is black, the second antennal joint and the palpi yellow; three postsutural and three sternopleural macrochætæ; wings blackish along the veins of the costal half; length, 7 mm. District of Columbia and southern Illinois. (Loc. cit.) ..... *atripennis* Coq.

Genus METOPIA Meig.

Metopia Meigen, in Illiger's Magazin für Insektenkunde, Vol. II, p. 280; 1803.
Ophelia Desvoidy, Essai sur les Myodaires, p. 120; 1830.

This synonymy is given by Macquart[1] and repeated by Schiner[2] and by Brauer and Bergenstamm.[3] Our single species is black, including the palpi, sides of abdomen sometimes partly yellow; three postsutural and two sternopleural macrochætæ; length 6 to 8 mm. White Mountains, New Hampshire; Beverly, Mass.; District of Columbia; northern Illinois; Kenedy, Tex.; Colorado; Los Angeles County, Cal.; Washington; France; Germany, and Austria. A male from Austria, from the old Schiner collection, received from Brauer and Bergenstamm and by them labeled *Metopia leucocephala* (Rossi) Schiner; three males from Germany, received from Zeller, and by him labeled *Metopia leucocephala;* also one specimen of each sex from France, received from H. du Buysson, and labeled as above. (Fauna Etrusca, Vol. II, p. 1501; 1791: *Musca. Musca labiata* Fabricius,[4] Entomologia Systematica, Vol. IV, p. 329; 1794. *Araba squamipallens* Desvoidy, Essai sur les Myodaires, p. 130; 1830. *Araba grisea* Desvoidy, loc. cit., p. 131. *Degeeria lateralis* Macquart, Dipt. Exot., Sup. III, p. 208 [48]; 1847. *Metopia luggeri* Townsend, Can. Entom., Vol. XXIV, p. 69; March, 1892.) ..... *leucocephala* Rossi.

Genus ARABA Desv.

Araba Desvoidy, Essai sur les Myodaires, p. 127; 1830.
Eumetopia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 114; 1889.

This synonymy has already been acknowledged by the last-mentioned authors.[5] Our single species is wholly black; front in male

[1] Annales Soc. Ent. France, p. 436; 1850.
[2] Fauna Austriaca, Vol. I, p. 498; 1862.
[3] Zweif. Kais. Mus. Wien, VI, p. 234; 1893.
[4] This synonymy is given by Meigen and repeated by most subsequent authors. The synonymy of *squamipallens* is according to Schiner; the remainder is by the writer.
[5] Zweif. Kais. Mus. Wien, V, p. 359; 1891.

silvery, including the vitta, in the female grayish pollinose, the vitta brownish; orbital bristles present in both sexes; three postsutural and two sternopleural macrochætæ, thorax of male grayish pollinose except on the front end, not vittate, that of the female gray pollinose and marked with four black vittæ; abdomen gray pollinose, last three segments black on the hind margins, or each marked with three black spots; length, 4 to 6 mm. Northern Illinois; Colorado, and Los Angeles County, Cal. (Journ. N. Y. Ent. Soc., Vol. III, p. 103; September, 1895.) ..... *tergata* Coq.

Genus OPSIDIA Coq.

Opsidia Coquillett, Journal N. Y. Ent. Soc., Vol. III, p. 102; September, 1895.

Our single species is black, the first two joints of the antennæ and the palpi yellow; three postsutural and two or three sternopleural macrochætæ; length, 9 mm. From the type specimen. Massachusetts; Atlantic City, N. J., and Iowa. (Loc. cit.) ..... *gonioides* Coq.

Genus HILARELLA Rond.

Hilarella Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 70; 1856.
Eumacronychia Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 98; May, 1892.
Gymnoprosopa Townsend, loc. cit., p. 108.

This synonymy is by the writer. All of our species have three postsutural and two sternopleural macrochætæ:

1. Tip of abdomen black, scutellum bearing three pairs of marginal macrochætæ ..... 2.
   Tip of abdomen and the genitalia yellow, scutellum bearing only two pairs of marginal macrochætæ, abdomen gray pollinose, hind margins of the first three segments black, third vein bristly at least halfway to the small crossvein, arista thickened on the basal half; length, 6 to 8 mm. From a cotype specimen received from Mr. Townsend. Las Cruces, N. Mex., and Los Angeles County, Cal. (Trans. Amer. Ent. Soc., Vol. XIX, p. 99; May, 1892: *Eumacronychia.*) ..... *decens* Town.
2. Third vein bristly at least halfway to the small crossvein ..... 3.
   Third vein bearing from one to four bristles near its base ..... 4.
3. Arista thickened on at least the basal three-fifths, abdomen gray pollinose, the first three segments each marked with from one to three black spots, hind margin of the fourth segment also black, antennæ usually but not always yellow; length, 5 to 9 mm. Franconia, N. H.; New Bedford, Mass.; Avalon and Angelsea, N. J., and northern Illinois. From the type specimen. (Journal N. Y. Ent. Soc., Vol. III, p. 106; September, 1895: *Gymnoprosopa.*) ..... *fulvicornis* Coq.
   Arista at most thickened on the basal two-fifths, abdomen shining

black, the bases of the last three segments gray pollinose; length, 4 to 5 mm. Southern Illinois; Atlanta, Ga., and Florida. (Trans. Amer. Ent. Soc., Vol. XIX, p. 109; May, 1892: *Gymnoprosopa*. *Gymnoprosopa argentifrons* Townsend, loc. cit. *Gymnoprosopa clarifrons* Townsend, loc. cit.).....*polita* Town.

4. Third vein bearing three or four bristles near its base, the outermost at the first fifth of distance to the small crossvein, abdomen gray pollinose and marked with five rows of black spots, the two outer ones situated on the lateral margins; arista thickened on the basal two-fifths; length, 5 to 6 mm. Clementon, N. J.; Tifton, Ga.; Colorado, and Los Angeles Co., Cal. (Diptera Scandinaviæ, Vol. III, p. 1213; 1844: *Miltogramma*.)...*siphonina* Zett.

Third vein bearing a single bristle near its base, arista thickened on the basal three-fourths ..... 5.

5. Frontal vitta next the antennæ almost as wide as either side of the front, abdomen gray pollinose, the first segment and three large spots on the second and third shining black; black; face white, sides of front yellowish pollinose, front in the male one-half, in the female as wide as, either eye, two pairs of orbital bristles in both sexes, antennæ four-fifths as long as the face, the third joint four times as long as the second, penultimate joint of arista broader than long, cheeks scarcely one-sixth as broad as the eye height, vibrissæ fully developed, only two or three bristles above each; thorax gray pollinose, marked with four black vittæ, scutellum gray pollinose, the sides black, wings hyaline, calypteres white, macrochætæ of abdomen short and depressed, only marginal; length, 4 to 5 mm. Southern Illinois and Colorado. One male and two females, the former collected by Mr. Charles Robertson, the latter by Mr. Carl F. Baker. Type No. 3634, U. S. National Museum.....*aristalis* n. sp.

Frontal vitta next the antennæ less than one-third as wide as either side of the front; black, the antennæ, face, palpi, and first three segments of abdomen yellow, abdomen shining except the whitish pollinose bases of the last three segments; front in both sexes almost as wide as either eye, antennæ in the male five-sixths, in the female three-fourths, as long as the face, the third joint in the male six, in the female four, times as long as the second, thorax gray pollinose, not vittate, wings hyaline, calypteres white; length, 4 to 5 mm. Holly Springs, Miss. Three males and one female, collected by F. W. Mally..*rufiventris* n. sp.

Unrecognized species.—*H.* (*Eumacronychia*) *elita* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 100; 1892. Las Cruces, N. Mex.

Genus TRICOGENA Rond.

Tricogena Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 88; 1856.
Frauenfeldia Egger, Verhand. Kais.-Kön. Zool.-Botan. Gesell., Vol. XV, p. 297; 1865.

This synonymy is according to Brauer and Bergenstamm:[1]

Palpi yellow, insect elsewhere black; front of female one and one-fourth times as wide as either eye, two pairs of orbital bristles, frontal bristles descending to the arista, sides of face each at narrowest part one-half as wide as the facial depression, each bearing two downwardly curving macrochætæ, the lowest of which is nearly on a level with lower ends of eyes, cheeks two-fifths as wide as the eye-height, vibrissæ slightly above the oral margin, one or two bristles above each; antennæ four-fifths as long as the face, the third joint only slightly longer than the second, arista thickened on the basal fourth, the penultimate joint broader than long; thorax whitish pollinose, not distinctly vittate, three postsutural and two sternopleural macrochætæ, scutellum bearing three long marginal pairs, abdomen shining, the bases of the second and third segments whitish pollinose, first three segments bearing marginal macrochætæ; middle tibiæ each bearing two on the front side near the middle; wings whitish hyaline, the costal edge brownish, third vein bearing two bristles at the base, hind crossvein midway between the small and the bend, petiole of apical cell slightly shorter than the small crossvein, calypteres white; length, 5 mm. Colorado. A female specimen. Type No. 3635, U. S. National Museum. *costalis* n. sp.

Palpi black, insect elsewhere black; front of female almost as wide as either eye, frontal bristles descending slightly below base of first antennal joint, sides of face at narrowest part each one-fifth as wide as the median depression, each bearing a row of macrochætæ and scattered black hairs, cheeks nearly one-third as broad as the eye height, antennæ three-fourths as long as the face, the third joint twice as long as the second; body with a strong brassy tinge, three sternopleural macrochætæ, bases of last three segments of abdomen whitish pollinose; wings hyaline, the portion in front of fifth vein tinged with yellowish, especially along the veins and crossveins, third vein bristly almost to the small crossvein; length, 7 mm., otherwise as in the above description of *costalis*. Franconia, N. H. A single female specimen collected by Mrs. A. T. Slosson. Type No. 3636, U. S. National Museum..... .....*setipennis* n. sp.

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[1] Zweif. Kais. Mus. Wien, VI, p. 238; 1893.

Genus BRACHYCOMA Rond.

Brachycoma Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 69; 1856.
Laccoprosopa Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 365; December, 1891.
Sarcotachinella Townsend, loc. cit., Vol. XIX, p. 110; 1892.

A comparison of a cotype specimen of *Laccoprosopa sarcophagina* (the type species of this genus) kindly submitted by Mr. Charles Robertson, of Carlinville, Ill., with a specimen of *Brachycoma devia* (the type species of the latter genus) received from and identified by Brauer and Bergenstamm, fails to disclose any difference of generic importance; and the same is true in regard to specimens that I identify as *Sarcotachinella intermedia* Town. All of our species have only three postsutural macrochætæ:

1. Fourth segment of abdomen wholly black ..... 3.
   Fourth segment largely yellow, abdomen destitute of discal macrochætæ, scutellum bearing three marginal pairs, bend of fourth vein appendiculate ..... 2.
2. Sides of face each bearing a row of macrochætæ, palpi black; length, 8 to 10 mm. Southern California. (Entomological News, Vol. V, p. 172; June, 1894.) ..... *davidsoni* Coq.
   Sides of face bearing short bristly hairs not disposed in rows, palpi yellow; black, the palpi and fourth abdominal segment yellow, antennæ more or less reddish; front in the male one-half, in the female almost, as wide as either eye, three pairs of orbital bristles in the female, wanting in the male; cheeks two-thirds as wide as the eye height; antennæ five-sixths as long as the face, the third joint one and two-thirds times as long as the second, arista thickened on the basal fourth; abdomen gray pollinose, the first three segments marked with a black dorsal vitta and two subdorsal rows of black spots situated on the hind margins of the segments; second segment bearing a small marginal pair of macrochætæ, the third and fourth each with a marginal row; front pulvilli of male slightly longer than, of the female two-thirds as long as, the last tarsal joint; wings hyaline, third vein bristly almost halfway to the small cross-vein, calypteres white; length, 7 to 8 mm. Connecticut and Virginia. A single specimen of each sex, that from Virginia collected by Theodore Pergande May 23, 1884. Type No. 3638, U. S. National Museum ..... *apicalis* n. sp.
3. Second and third segments of abdomen destitute of discal macrochætæ, thorax marked with three or five black vittæ ..... 4.
   Second and third segments bearing discal macrochætæ, thorax marked with four black vittæ; black, the palpi and base of third antennal joint yellow; front in female three-fourths as wide as either eye, two pairs of orbital bristles, antennæ four-fifths as long as the face, the third joint scarcely longer than

the second, arista thickened on the basal fourth, sides of face each bearing a single row of macrochætæ, cheeks one-fourth as wide as the eye height; scutellum bearing three pairs of long marginal macrochætæ; abdomen opaque gray pollinose, with darker reflecting spots, first and second segments with a marginal pair, second and third each with a discal pair, third with a marginal row, and the fourth with three rows of macrochætæ; wings hyaline, third vein bristly halfway to the small crossvein, apical cell short petiolate, calypteres white; length, 6 mm. San Diego, Tex. A female collected May 2, 1895, by E. A. Schwarz. Type No. 3639, U. S. National Museum. *pulverea* n. sp.

4. Scutellum bearing only two pairs of long marginal macrochætæ, costal spine much longer than the small crossvein; length, 8 to 9 mm. Westville, N. J.; Potomac Creek, Va.; Tifton, Ga., and Florida. (Trans. Amer. Ent. Soc., Vol. XIX, p. 111; May, 1892: *Sarcotachinella.*) ..... *intermedia* Town.

Scutellum bearing three pairs of long marginal macrochætæ, costal spine noticeably shorter than the small crossvein; length, 6 to 8 mm. Cumberland County, N. J., and southern Illinois. (Trans. Amer. Ent. Soc., Vol. XVIII, p. 366; December, 1891: *Laccoprosopa.*) ..... *sarcophagina* Town.

Unrecognized species.—B.(?) *macropogon* Bigot, Ann. Soc. Ent. France, p. 259; 1888. California.

Genus EUTHYPROSOPA Town.

Euthyprosopa Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 106; May, 1892.

Our single species is black, the antennæ, middle of face, lower part of head, the palpi, corners of thorax, scutellum, hind margin of each segment of abdomen, apices of femora and the tibiæ, yellow; three postsutural and two sternopleural macrochætæ; length, 7 mm. From a cotype specimen. Las Cruces, N. Mex. (Loc. cit., p. 107.) *petiolata* Town.

Genus GONIA Meig.

Gonia Meigen, in Illiger's Magazin für Insektenkunde, Vol. II, p. 280; 1803.
Rhedia Desvoidy, Essai sur les Myodaires, p. 74; 1830.
Reaumuria Desvoidy, loc. cit., p. 79.
Isomera Desvoidy, Annales Soc. Ent. France, p. 315; 1851.
Pissemya Desvoidy, loc. cit., p. 318.

Desvoidy proposed the name Rhedia for the genus Gonia, erroneously stating that the latter term had been previously used in Conchology; and in the Annales Soc. Entomol. France, second series, p. 309, he states that his genus Reaumuria contains the males, and Rhedia the females, of the same species. The synonymy of Isomera is by Schiner,[1] and that of Pissemya is by Brauer and Bergenstamm.[2]

[1] Fauna Austriaca, Vol. I, p. 441; 1862.
[2] Zweif. Kais. Mus. Wien, VI, p. 235; 1893.

All of our species have four postsutural and four sternopleural macrochætæ, and at most with only two marginal macrochætæ on the first segment of the abdomen; hind tibiæ outwardly ciliate, two pairs of orbital bristles in both sexes:

1. Third joint of antennæ, except sometimes the base, black..... 2.
   Third joint of antennæ deep yellow; otherwise as in *capitata;* length, 11 to 13 mm. Maryland; St. Louis, Mo., and Georgia. (Canadian Entomologist, Vol. XIX, p. 10; January, 1887. *Gonia sagax* Townsend, Canadian Entomologist, Vol. XXIV, p. 65; March, 1892.).....*senilis* Will.
2. Viewed from the side, the head projects in front of the eye only slightly more than the horizontal diameter of the eye, and is sparsely covered with bristly hairs; sides of front, when viewed from behind, shining, destitute of pollen except next the eyes; abdomen black, the sides sometimes partly or wholly reddish or yellow, bases of last three segments gray pollinose; length, 9 to 14 mm. Toronto, Canada; Beverly, Mass.; Oswego, N. Y.; District of Columbia; North Carolina; Georgia; Detroit, Mich.; Illinois; Ames, Iowa; Missouri; Sunnyside, Ark.; Kansas; Texas; Colorado; California; Pullman, Wash., and Austria. A male specimen from Austria received from Brauer and Bergenstamm and by them labeled *Gonia capitata* DeGeer.[1] (Memoires servir l'Histoire Insectes, Vol. VI, p. 12; 1776: *Musca. Gonia frontosa* Say, Journal Acad. Nat. Sci. Phila., Vol. VI, p. 175; 1829. *Gonia philadelphica* Macquart, Diptères Exotiques, Vol. II, Part III, p. 208 [51]; 1842. *Gonia albifrons* Walker, List of Dipterous Insects, Part IV, p. 798; 1849. *Gonia exul* Williston, Can. Entomologist, Vol. XIX, p. 11; Jan., 1887. *Gonia sequax* Williston, loc. cit., p. 12.).*capitata* DeGeer.
   Viewed from the side, the head projects in front of the eye almost twice the horizontal diameter of the eye and is densely covered with bristly hairs; sides of front when viewed from behind wholly covered with white pollen; black, the front, including the vitta, the face, cheeks, palpi, humeri, hind end of thorax, scutellum, and sides of the first three segments of the abdomen except the hind margin of the third, yellow; front in profile only slightly convex, almost at right angles to the occiput, in the male two and one-half times as wide as either eye, frontal bristles descending to base of second antennal joint, two or

[1] The synonymy of this species in Europe is very uncertain and unsatisfactory. It will doubtless be found that *ornata* Meigen and *fasciata* Meigen are but colorational forms of *capitata* DeGeer. Our specimens of the latter from this country show every possible gradation from those with the abdomen wholly black to those that have it yellow and marked with a narrow black dorsal vitta. A female having the abdomen wholly black except a small yellowish spot on each side of the second segment was taken united in coition to a male in which the sides of the first three segments were almost wholly yellowish.

three irregular rows of macrochætæ on the outer side of each row, the front near the eyes densely covered with rather long bristly hairs, sides of face each one and one-half times as wide as the median depression, densely covered with rather long black bristly hairs which are less numerous along the facial ridges, the latter bare except that there are two or three bristles above the vibrissæ, cheeks two-thirds as broad as the eye height, antennæ almost as long as the face, the third joint six times as long as the second, arista thickened to the tip, the penultimate joint as long as the last one; thorax whitish pollinose, marked with four black vittæ; scutellum bearing three pairs of long marginal and a very short apical pair of macrochætæ; abdomen wholly covered with whitish pollen, the hairs rather long and suberect, first two segments each bearing a marginal pair, the third with a marginal row, the fourth covered on its apical half with macrochætæ; front pulvilli of male three-fourths as long as the last tarsal joint; wings hyaline, third vein bristly one-third of distance to the small crossvein, hind crossvein arcuate, its posterior end slightly nearer the wing margin than to the small crossvein, calypteres white; length, 14 mm. Los Angeles Co., Cal. A male specimen captured by the writer in April. Type No. 3640, U. S. National Museum . . . *turgida* n. sp.

Unrecognized species.—*G. porca* Williston, Canadian Entomologist, Vol. XIX, p. 10; 1887. Mount Hood, Oreg.

Genus SPALLANZANIA Desv.

Spallanzania Desvoidy, Essai sur les Myodaires, p. 78; 1830.
Cnephalia Rondani, Dipterologiæ Italicæ Prodromus, Vol. I, p. 62; 1856.
Acroglossa Williston, in Scudder's Butterflies of New England, Vol. III, p. 1916; 1889.
Pseudogonia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 100; 1889.

Brauer and Bergenstamm have already placed Spallanzania, Cnephalia and Pseudogonia as subgenera of one genus,[1] and Mr. F. H. Snow has united these subgenera into one genus.[2] The synonymy of Acroglossa is by the writer.[3] Our species are black, the palpi, scutellum, and sometimes the sides and apex of abdomen and the first two joints of antennæ. yellow; four postsutural and four or five sternopleural macrochætæ; two pairs of orbital bristles in the female, wanting in the male:

1. Facial depression as wide as either side of face, bristles on the latter not arranged in rows . . . . . 2.

Facial depression twice as wide as either side of face, bristles on the latter arranged in two rows, pollen on sides of front yellowish, on the face white; third joint of antennæ in the male three, in

[1] Zweif. Kais. Mus. Wien, VI, p. 214; 1893.
[2] Kansas University Quarterly, Vol. III, p. 181; January, 1895.
[3] Psyche, Vol. VII, p. 261; July, 1895.

the female one and one-half, times as long as the second; penultimate joint of arista in the male four times, in the female slightly over twice, as long as broad; length, 10 to 12 mm. Franconia, N. H.; Delaware County, Pa.; Maryland; northern Illinois, and Tifton, Ga. (In Scudder's Butterflies of New England, Vol. III, p. 1917; 1889: *Acroglossa. Pseudogonia ruficauda* Townsend, Can. Entomologist, Vol. XXIV, p. 66; March, 1892. *Pseudogonia obsoleta*[1] Townsend, loc. cit.) . . . . *hesperidarum* Will.

2. Third joint of antennæ in the male from two to two and three-fourths, in the female from one to one and one-half, times as long as the second; penultimate joint of arista in the male from one and one-half to four, in the female one and one-fourth, times as long as broad; length, 11 to 12 mm. North Carolina; Georgia; Fernandina, Fla., and Austria. A female from Austria received from Brauer and Bergenstamm and by them labeled *Cnephalia bisetosa*[2] B. B. (Diptera Sueciæ, Muscidæ, p. 11; 1820: *Tachina.* The following synonymy is by Desvoidy in Annales Soc. Entomol. France, p. 317; 1851: *Spallanzania gallica* Desvoidy, Essai sur les Myodaires, p. 79; 1830. The following is by Kowarz in Wiener Ent. Zeitung, Vol. VII, p. 6; January 31, 1888: *Gonia nudifacies* Macquart, Diptères Nord France, Vol. V, p. 179; 1833. *Isomera parisiaca* Desvoidy, Annales Soc. Entomol. France, p. 315; 1851. *Gonia cognata* Rondani, Dipt. Italicæ Prod., Vol. III, p. 38; 1859. *Spallanzania alpestris* Rondani, loc. cit., Vol. IV, p. 155; 1861. The following is by the writer: *Cnephalia pansa* Snow, Kansas University Quarterly, Vol. III, p. 182; January, 1895.) . . . . . *hebes* Fall.

Third joint of antennæ in the male eight times as long as the second, penultimate joint of his arista four times as long as broad; black, the palpi and scutellum yellow; front of male twice as wide as either eye, the sides and face whitish pollinose and wholly covered with short macrochætæ except a narrow space outside of the facial ridges, frontal bristles short, descending to the arista; cheeks slightly over one-half as broad as the eye height, facial ridges bristly on the lower four-fifths, antennæ seven-eighths as long as the face, arista thickened almost to the tip; thorax gray pollinose, marked with four black vittæ, scutellum bearing three long marginal pairs and a short apical pair of macrochætæ, abdomen gray pollinose and with reflecting blackish spots, second and third segments bearing marginal macrochætæ, wanting on the first; front pulvilli two-thirds as long as the last tarsal joint; wings hyaline, third vein bearing five bristles at

[1] The identity of *ruficauda* and *obsoleta* has already been given by F. H. Snow in the Kansas University Quarterly, Vol. III, p. 183, from an examination of the type specimens.

[2] In the Zweif. Kais. Mus. Wien, VI, p. 222, Brauer and Bergenstamm state that Fallen's type specimen of *hebes* is identical with their *bisetosa*.

the base: calypteres white: length, 12 mm. Alameda County, Cal. A single male specimen reared from an undetermined lepidopterous chrysalis by Mr. Albert Koebele in September. Type No. 3641, U. S. National Museum ..... *antennalis* n. sp.

Unrecognized species.—*S.* (*Cnephalia*) *finitima* Snow, Kansas University Quarterly, Vol. III, p. 184; 1895. N. Mex.

Genus GÆDIOPSIS Br. and Berg.

Gædiopsis Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 336; 1891.

Our species have four postsutural and four sternopleural macrochætæ:

1. Fourth segment of abdomen black ..... 2.

   Fourth segment yellow, second and third segments destitute of discal macrochætæ, legs black, macrochætæ on sides of face very small, hardly two-thirds as long as those on the facial ridges; length, 11 mm. Philadelphia, Pa. (Zweif. Kais. Mus. Wien, VI, p. 190; 1893.) ..... *mexicana* Br. and Berg.

2. Second and third segments of abdomen bearing only marginal macrochætæ, femora and tibiæ yellow; length, 7.5 mm. Tifton, Ga., and Mobile, Ala. (Journal N. Y. Ent. Soc., Vol. III, p. 100; September, 1895.) ..... *flavipes* Coq.

   Second and third segments bearing discal and marginal macrochætæ, legs black; black, the face, cheeks, palpi, scutellum, and sometimes the second antennal joint and a spot on sides of each of the first three segments of the abdomen, yellow; front of male four-fifths, of female one and one-fifth times, as wide as either eye, two pairs of orbital bristles in the female, none in the male, sides of face bearing a row of macrochætæ as long as those on the facial ridges, and in addition numerous bristly hairs, principally located near the eyes; cheeks over one-third as broad as the eye-height; antennæ five-sixths as long as the face, the third joint in the male two and one-half times, in the female twice, as long as the second, arista thickened on the basal two-thirds, the penultimate joint four or five times as long as wide; facial ridges bristly on the lower three-fifths; thorax gray pollinose, marked with four black vittæ, scutellum bearing three pairs of long marginal and a short apical pair of macrochætæ; abdomen gray pollinose and with dark reflecting spots; middle tibiæ each bearing three macrochætæ on the front side near the middle, hind tibiæ outwardly ciliate, front pulvilli of male as long as the last tarsal joint; wings hyaline, third vein bearing two bristles near the base, bend of fourth vein not appendiculate, calypteres white; length, 12 mm. Siskiyou Co., Cal. A male and a female bred by A. Koebele from chrysalids of an unknown Noctuid. Type No. 3642, U. S. Nat. Mus. . *setosa* n. sp.

Genus CHÆTOGÆDIA Br. and Berg.

Chætogædia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, V, p. 336; 1891.

Our species have four postsutural and four sternopleural macrochætæ; palpi yellow:

1. Femora black, apical cell open ..... 2.
   Femora and tibiæ yellow, apical cell short petiolate, hind tibiæ outwardly ciliate, sides of front densely yellowish gray pollinose, sides of face each bearing a row of macrochætæ and with a row of bristly hairs between it and the eye; length, 8 mm. Santa Fe, N. Mex. (Biol. Cent.-Amer., Diptera, Vol. II, p. 121; May, 1890: *Prospherysa.*) ..... *rufifrons* v. d. W.
2. Sides of front opaque, covered with a grayish pollen ..... 3.
   Sides of front shining, destitute of pollen, sides of face bearing two or more irregular rows of bristly hairs between each eye and the row of macrochætæ, abdomen black, the fourth segment yellow; length, 10 to 12 mm. District of Columbia, and Mescalero, N. Mex. (Tijdschr. voor Ent., Vol. II, p. 148; 1867: *Baumhaueria. Frontina acroglossoides* Townsend, Trans. Amer. Ent. Soc., Vol. XVIII, p. 367; December, 1891.) ..... *analis* v. d. W.
3. Macrochætæ on sides of face much nearer to the eyes than to the facial ridges and appearing like a continuation of the frontal bristles, only a few bristly hairs between them and the eyes; abdomen wholly black; length, 10 to 12 mm. Las Cruces, N. Mex., and California. (Biol. Cent.-Amer., Diptera, vol. II, p. 120; May, 1890: *Prospherysa.*) ..... *crebra* v. d. W.
   Macrochætæ on sides of face nearer to the facial ridges than to the eyes and widely removed from the lowest frontal bristles, numerous bristly hairs between them and the eyes, sides of abdomen and the fourth segment largely or wholly yellowish; length, 10 to 12 mm. California, and Kailua, Hawaii. (Ann. Soc. Ent. France, p. 91; 1888: *Blepharipeza.*) ..... *monticola* Bigot.

Genus DICHOCERA Will.

Dichocera Williston, Entomological News, Vol. VI, p. 31; January, 1895.

Our two species are black, the palpi, apex of scutellum and of the abdomen, and in one species also the antennæ, yellow; two sternopleural macrochætæ:

Third antennal joint yellow, three postsutural macrochætæ, a marginal pair on the second abdominal segment and a discal pair on the third; length, 10 mm. Eastern Washington. (Entomological News, Vol. VI, p. 32; January, 1895.) ..... *lyrata* Will.

Third antennal joint largely black, four postsutural macrochætæ, second abdominal segment destitute of a marginal pair, the third destitute of a discal pair; black, the first two joints of antennæ

and lower side of the third at its base, the palpi, apex of scutellum and of the abdomen, yellow; front in female one and one-fifth times as wide as either eye, two pairs of orbital bristles, sides of face bristly on the upper two-thirds in addition to the row of macrochætæ, cheeks slightly wider than the eye height, antennæ four-fifths as long as the face, the third joint four times as long as the second; arista thickened on the basal three-fifths, the penultimate joint four times as long as wide, nearly twice as long as the first joint; thorax gray pollinose, marked with four black vittæ; scutellum bearing three pairs of long marginal macrochætæ; abdomen destitute of dorsal macrochætæ on the first two segments, the third with a marginal row, the fourth covered except on the basal half; middle tibiæ each bearing three long macrochætæ on the outside near its middle, front tarsi slightly dilated; wings hyaline, apical cell nearly as wide as the discal cell, third vein bristly nearly halfway to the small crossvein, the others bare, bend of fourth vein not appendiculate, calypteres white; length, 11 mm. Beverly, Mass. Two female specimens. Type No. 3643, U. S. National Museum..... *orientalis* n. sp.

Genus MICROPHTHALMA Macq.

Microphthalma Macquart, Diptères Exotiques, Vol. II, Part III, p. 241 (84); 1843.

Our species is black, the antennæ, face, cheeks, palpi and apex of proboscis, yellow; three postsutural and three sternopleural macrochætæ; length, 12 to 15 mm. Franconia, N. H.; Beverly, Mass.; District of Columbia; Chicago, Ill.; Georgia; Utica. Miss.; Texas; Onaga, Kans., and Kern County, Cal. (Analecta Entomologica, p. 45; 1824: *Tachina. Miltogramma trifasciata* Say, Jour. Acad. Nat. Sciences Phila., Vol. VI, p. 174; 1829. *Microphthalma nigra* Macquart, Diptères Exotiques, Vol. II, Part III, p. 242 (85); 1843. *Tachina trixoides* Walker, List of Dipt. Insects, Part IV, p. 760; 1849. *Megaprosopus michiganensis* Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 111; May, 1892. *Macronychia trifasciata* Say, Brauer and Bergenstamm *in litt.* *Dexiosoma* sp., Brauer and Bergenstamm *in litt.*).. *disjuncta* Wied.

Genus AMOBIA Desv.

Amobia Desvoidy, Essai sur les Myodaires, p. 96; 1830.
Macronychia Rondani, Dipterologiæ Italicæ Prodromus, p. 229; 1859.
Trixoclista Townsend, Trans. Amer. Ent. Soc., Vol. XIX, p. 102; 1892.
Ammobia Brauer and Bergenstamm, Zweiflügler Kais. Mus. Wien, VI, p. 226; 1893.
(*Non* Billberg, Enumeratio Insectorum, p. 105; 1820.)

The synonymy of Amobia and Macronychia has already been given by Schiner,[1] and repeated by Brauer and Bergenstamm.[2] Two species occur in our fauna; both have only three postsutural macrochætæ:

Thorax marked with three or five black vittæ; abdomen gray pollinose, marked with three rows of black spots; orbital bristles

[1] Fauna Austrica, Vol. I, p. 501; 1862.
[2] Zweif. Kais. Mus. Wien, VI, p. 226; 1893.

present in both sexes; length, 7 to 9 mm. London, Canada; White Mountains, New Hampshire; Colorado, and Washington. (Trans. Amer. Ent. Soc., Vol. XIX, p. 103; May 1892: *Trixoclista.*) ..... *distincta* Town.

Thorax marked with four black vittæ; abdomen shining black, bases of the segments thinly gray pollinose; length, 9 to 11 mm. Los Angeles County, Cal. (Journ. N. Y. Ent. Soc., Vol. III, p. 100; September. 1895.) ..... *californica* Coq.

Genus TRICHOPHORA Macq.

Trichophora Macquart, Diptères Exotiques, Supplement II, p. 78 (62); 1847.
Elachipalpus Rondani, Nuovi Ann. Sc. Nat. Bologna, Vol. II, p. 169; 1850.

Brauer and Bergenstamm state that these two genera could properly be united into one genus,[1] and the writer is of the same opinion. Our species have three postsutural and three sternopleural macrochætæ, the second and third segments of the abdomen bearing only marginal ones, apex of the fourth segment yellowish, the third vein bristly almost to the small crossvein:

Ocellar bristles absent, scutellum wholly black; length, 8 to 10 mm. Montgomery County, Pa.; Dist. Columbia; Virginia; Georgia; Lake Worth, Fla.; Utica, Miss., and Texas. (Tijdschrift voor Entom., Vol. II, p. 146; 1867: *Schineria. Elachipalpus undulatus* Say MS., Brauer and Bergenstamm *in litt.*) . . *ruficauda* v. d. W.

Ocellar bristles present, directed obliquely forward; black, the first two joints of the antennæ, face, cheeks, apex of scutellum, and of the fourth segment of the abdomen, also the tibiæ, yellow, frontal vitta and third joint of antennæ, brown; front of female one and one-half times as wide as either eye, the sides subopaque gray pollinose and bearing two pairs of orbital bristles, sides of face bearing sparse and rather short black hairs, cheeks one-half as broad as the eye height, head at the vibrissæ as long as at base of antennæ, antennæ four-fifths as long as the face, the third joint as long as the second, scarcely longer than broad, arista thickened on the basal two-thirds, the penultimate joint three times as long as broad; thorax gray pollinose, marked with four black vittæ, scutellum bearing two long marginal pairs and a short apical pair of macrochætæ; abdomen gray pollinose and with darker reflecting spots, second and third segments bearing marginal, the fourth with discal and marginal macrochætæ; wings hyaline, the base tinged with yellowish, calypteres white; length, 9 mm. Los Angeles County, Cal. A single female specimen bred from a chrysalis of *Adisophanes miscellus* by A. Koebele. Type No. 3645, U. S. National Museum ..... *miscelli* n. sp.

[1] Zweif. Kais. Mus. Wien, VI, p. 214; 1893.

Genus CUPHOCERA Macq.

Cuphocera Macquart, Annales Soc. Ent. France, p. 267; 1845.
Palpibraca Rondani, Annali Naturalisti Napoli; 1845.
Sphyricera Lioy, Atti Instituto Veneto, Vol. IX, p. 1336; 1864.

The synonymy of the first two is according to Rondani.[1] Sphyricera is referred by Brauer and Bergenstamm as a subgenus of Cuphocera.[2] Our two species have three postsutural and three sternopleural macrochætæ:

Abdomen black, the fourth segment yellowish; length, 10 to 12 mm. Franconia, N. H.; Massachusetts; Westville, N. J., and northern Illinois. (Tijdschrift voor Entomologie, Vol. XXXV, p. 193; 1892: *Trichophora.*) ..... *fucata* v. d. W.

Abdomen yellowish, a dorsal black vitta on the first three segments; length, 10 to 13 mm. Lake Worth, Fla., and California. (Diptères Exotiques, Supplement IV, part II, p. 148 (175); 1849: *Micropalpus.*) ..... *californiensis* Macq.

Genus PELETERIA Desv.

Peleteria Desvoidy, Essai sur les Myodaires, p. 39; 1830.
Sphyromyia Bigot, Bulletin Soc. Ent. France, p. 108; 1883.
Chætopeleteria Mik, Wiener Entomol. Zeitung, Vol. XIII, p. 100; March 31, 1894.
Tetrachæta Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, VII, p. 611; 1894.

The synonymy of the first two is by the writer; the last two are given by Brauer and Bergenstamm as subgenera of Peleteria.[3] Our species have four postsutural and three sternopleural macrochætæ:

1. Abdomen yellow on the sides or at the apex, thorax and sides of front pollinose ..... 2.

   Abdomen wholly shining black, not pollinose, sides of front shining bronze black, thorax shining, almost destitute of pollen, front tarsi of female noticeably dilated; length, 12.5 mm. Bighorn Mountains, Wyoming; Colorado, and Salmon City, Idaho. (In Zetterstedt's Diptera Scandinaviæ, Vol. VIII, p. 3217; 1849: *Echinomyia. ? Tachina hirta* Curtis, in Ross's Voyage to the Arctic Region, p. 79; 1831.) ..... *ænea* Staeger.

2. Second and third segments of abdomen largely or wholly gray pollinose; length, 10 to 14 mm. Toronto, Canada; White Mountains, New Hampshire; Allegheny, Pa.; Ithaca, N. Y.; northern Illinois; Missouri; Georgia; Texas; Denver, Colo., and Santa Cruz, Lake, Calaveras and Los Angeles counties, Cal. (Aussereuropäische Zweif. Insekten, Vol. II, p. 290; 1830: *Tachina. Echinomyia analis* Macquart, Diptères Exotiques, Suppl. I, p. 144; 1846. *Tachina anaxias* Walker, List of Dipterous Insects, Part IV, p. 726; 1849. *Echinomyia filipalpis* Rondani, Archivio Zool. l'Anat. e Fisiologia, Vol. III, p. 15; 1865. *Echinomyia*

[1] Dipterologiæ Italicæ Prodromus, Vol. I, p. 63; 1856.
[2] Zweif. Kais. Mus. Wien, VII, p. 613; 1894.
[3] Zweif. Kais. Mus. Wien, VII, p. 613; 1894

hæmorrhoa van der Wulp, Tijdschrift voor Entomologie, Vol. II, p. 145; 1867. *Echinomyia filipalpis* Thomson, Kongliga Svenska Fregatten Eugenies Resa, Diptera, p. 517; 1868. *Sphyromyia malleola* Bigot, Bulletin Soc. Entomol. France, p. 109; 1883. *Echinomyia thomsoni*[1] Williston, Trans. Amer. Ent. Soc., Vol. XIII, p. 301; October, 1886. *Echinomyia cora* Bigot, Annales Soc. Entomol. France, p. cxl; 1887. *Echinomyia cinerascens* Bigot, loc. cit., p. 256; 1888. *Peleteria thomsoni* Will., Brauer and Bergenstamm *in litt.*) ..... *robusta* Wied.

Second and third segments destitute of pollen on the yellow lateral portions except at the extreme bases; abdomen light yellow, usually marked with a dorsal row of black spots; length, 9 to 14 mm. Georgetown, Canada; White Mountains, New Hampshire; Beverly, Mass.; Lansing, Mich.; northern Illinois; Canon City, Colo.; Pullman, Wash.; Germany, and Austria. Two males from Austria received from Brauer and Bergenstamm, and by them labeled *Peleteria tessellata* Meig.; also one female from Germany, received from V. von Roeder, and by him labeled *Echinomyia tessellata.* (Entomologia Systematica, Vol. IV, p. 324; 1796: *Musca. Echinomyia nigricornis* Desvoidy, Essai sur les Myodaires, p. 45; 1830. *Tachina punctifera* Walker, List of Dipterous Insects, Part IV, p. 728; 1849. *Echinomyia flaviventris* van der Wulp, Biol. Cent.-Amer., Diptera, Vol. II, p. 32; April, 1888. *Echinomyia neglecta* Townsend, Annals Mag. Nat. Hist., Vol. XIX, p. 148; Feb., 1897. *Peleteria robusta* Wied., Brauer and Bergenstamm *in litt.*) ..... *tessellata* Fabr.

Genus ARCHYTAS Jaen.

Archytas Jaennicke, Neue Exotische Dipteren, p. 392; 1867.
Nemochæta van der Wulp, Biol. Cent.-Americana, Dipt., Vol. II, p. 38; April, 1888.
Tachinodes Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 133; 1889.
Parafabricia Brauer and Bergenstamm, loc. cit., VII, p. 612; 1894.

The above synonymy except the last one is according to Brauer and Bergenstamm,[2] who compared the types of these three descriptions; these authors state that the type of the genus Archytas has the proboscis broken, which accounts for the peculiar form accorded to this organ by Jaennicke. Parafabricia was considered by its founders as

[1] This name was proposed by Dr. Williston to replace *filipalpis* Thoms., preoccupied. On page 301 he gives *anaxias* Walk. and *analis* Macq. as probable synonyms of *hæmorrhoa* v. d. W. In the Biol. Cent.-Amer., Diptera, Vol. II, p. 32, van der Wulp gives the latter as synonymous with *robusta* Wied., places *analis* Macq. and *filipalpis* Rond. in the same category, and states that *filipalpis* Thom. may also be added to this list. He doubts the correctness of Williston's reference of *anaxias* Walk., owing to Walker's statement that there are "no bristles on the sides of the face;" but Walker refers to the facial ridges, and not to the sides of the face as at present understood. In the Dipteri del Messico, p. 10, Giglio-Tos places *cora* Bigot as a synonym of *filipalpis* Rond.

[2] Zweif. Kais. Mus. Wien, VI, p. 146; 1893.

being a subgenus of Archytas.[1] All of our species have the third antennal joint strongly convex on the upper side, four postsutural and three sternopleural macrochætæ:

1. Sides of face bearing black hairs, abdomen shining, not pollinose.. 3.
   Sides of face destitute of black hairs; calypteres whitish..... 2.
2. Abdomen subopaque, marked with large gray pollinose spots; black, the head except the occiput, the first two joints of antennæ, palpi, fourth abdominal segment largely, and sometimes the sides of the second, yellowish; thorax subopaque gray pollinose, marked with four black vittæ; length, 10 mm. Waco, Tex., and Jamaica, West Indies. (Tijdschrift voor Entomologie, Vol. XXVI, p. 22; 1883: *Echinomyia.*).....*piliventris* v. d. W.

   Abdomen shining, tinged with blue, not pollinose except the fourth segment; thorax opaque gray pollinose, with a strong brassy tinge, marked with five black vittæ, scutellum yellow, sometimes the sides and tip of the abdomen are more or less yellow; length, 11 to 15 mm. Toronto, Canada; White Mountains, New Hampshire; New York, N. Y.; District of Columbia; northern Illinois; Missouri; Georgia; Waco, Tex.; northern California, and Jamaica, West Indies. (Systema Antliatorum, p. 311; 1805: *Tachina. Jurinia amethystina* Macquart, Diptères Exotiques, Vol. II, Part II, p. 199 [42], 1842; and Supplement I, p. 147. *Tachina apicifera* Walker, List of Dipterous Insects, Part IV, p. 718; 1849. *Tachina californiæ* Walker, Insecta Saundersiana, Vol. I, p. 270; 1856. *Archytas* sp., Brauer and Bergenstamm *in litt.*).....*analis* Fabr.
3. Calypteres whitish..... 4.
   Calypteres brown, thorax shining bluish, the front end grayish pollinose and marked with four black vittæ, abdomen shining reddish, strongly tinged with pale blue; length, 13 to 16 mm. New Bedford, Mass.; Cumberland Gap, Ky.; Florida; Egypt, Ga.; Holly Springs, Miss.; Baton Rouge, La., and Kansas. (Systema Entomologiæ, p. 777; 1775: *Musca. Jurinia boscii* Desvoidy, Essai sur les Myodaires, p. 36; 1830. *Echinomyia georgica* Macquart, Histoire Naturelle Insectes, Diptères, Vol. II, p. 79; 1835. *Jurinia virginiensis* Macquart, Diptères Exotiques, Supplement IV, Part II, p. 144 (171); 1851. *Jurinia fuscipennis* Jaennicke, Neue Exot. Dipt., p. 83 (391); 1867. *Jurinia hystricoides* Williston, Trans. Am. Ent. Soc., Vol. XIII, p. 300; October, 1886. *Archytas hystricoides* Will., Brauer and Bergenstamm *in litt.*).....*hystrix*[2] Fabr.

[1] Loc. cit., VII, p. 613.

[2] In the Zweif. Kais. Mus. Wien, IV, p. 133, Brauer and Bergenstamm refer this species to the present genus from an examination of specimens which Wiedemann compared with the type specimen of *hystrix* and declared them to be identical with the latter.

4. Thorax bluish, subshining, thinly gray pollinose, and marked with four black vittæ; abdomen blackish, strongly tinged with blue, first joint of arista scarcely longer than wide; length, 10 to 15 mm. White Mountains, New Hampshire; Beverly, Mass.; New York, N. Y.; District of Columbia; Virginia; North Carolina; Florida; Tifton, Ga.; Holly Springs, Miss.; Cadet, Mo., and Keokuk, Iowa. (Essai sur les Myodaires, p. 35; 1830; *Jurinia. Jurinia leucostoma* Desvoidy, loc. cit., p. 37. *Jurinia smaragdina* Macquart, Diptères Exotiques, Vol. II, Part III, p. 196; 1842. *Tachina atra* Walker, Insecta Saundersiana, Vol. I, p. 273; 1856. *Archytas aterrima* Desv., Brauer and Bergenstamm *in litt.*)
aterrima Desv.

Thorax with a bronze tinge, subopaque, gray pollinose and marked with four black vittæ; abdomen black, with a bluish tinge, the sides broadly reddish, first joint of arista usually twice as long as wide; length, 11 to 15 mm. Massachusetts, North Carolina, Georgia, Florida, and Colorado. (Diptères Exotiques, Vol. II, Part II, p. 199 [42]; 1842. *Tachina candens* Walker, List of Dipterous Insects, Part IV, p. 720; 1849. *Tachina iterans* Walker, l. c., p. 727. *Jurinia apicalis* Jaennicke, Neue Exot. Dipt., p. 82 [390]; 1867. *Echinomyia victoria* Townsend, Annals Mag. Nat. Hist., Vol. XIX, p. 148; February, 1897.).....*lateralis* Macq.

Genus ECHINOMYIA Dumeril.

Echinomyia Dumeril, Exposit. Methode Naturelle Class. Insectes; 1801.
Fabricia Desvoidy, Essai sur les Myodaires, p. 42; 1830. (*Non* Blainville, 1828.)
Mikia Kowarz, Wiener Ent. Zeitung, Vol. IV, p. 51; February 1, 1885.
Pareudora Wachtl, Wiener Ent. Zeitung, Vol. XIII, p. 140; April 20, 1894.
Nowickia Wachtl, loc. cit.
Pararchytas Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, VII, p. 614; 1894.

The two genera of Wachtl are stated by Brauer and Bergenstamm to be identical with Echinomyia, and they place Fabricia, Mikia, and Pararchytas as subgenera of it.[1] Our species have four postsutural and usually three sternopleural macrochætæ:

1. Small crossvein never clouded with brown..... 2.
Small crossvein distinctly clouded, sides of mesonotum, scutellum, and abdomen, except sometimes a dorsal vitta, yellowish red; base of wings brown; length, 11 to 13 mm. Toronto, Canada; White Mountains, N. H.; New Jersey; Colorado, and southern California. (List of Dipterous Insects, Part IV, p. 715; 1849: *Tachina. Jurinia echinata* Thompson, Kongliga Svenska Fregatten Eugenies Resa, Diptera, p. 516; 1868. *Tachinodes decisa* Walk., Brauer and Bergenstamm *in litt.*).....*decisa* Walk.

[1] Zweif. Kais. Mus. Wien, VII, p. 614; 1894.

2. Abdomen distinctly yellowish on the sides or at the apex..... 3.
   Abdomen and thorax wholly blackish, sides of the former sometimes tinged with reddish; base of wings yellow; length, 12 to 17 mm. Toronto, Canada; White Mountains and Franconia, N. H.; Vermont; New Bedford, Mass.; Oswego, N. Y.; Colorado; Montana; British Columbia; Washington; Oregon, and California. (Ausser. Zweif. Insekten, Vol. II, p. 285; 1830: *Tachina. Echinomyia picea* Desvoidy, Essai sur les Myodaires, p. 44; 1830. *Echinomyia lapilæi* Desvoidy, loc. cit. *Tachina degenera* Walker, List of Dipterous Insects, Part IV, p. 732; 1849. *Jurinia nitida* van der Wulp, Notes from the Leyden Museum, Vol. IV, p. 82; 1882. *Echinomyia lugubris* van der Wulp, Tijdschrift voor Entomologie, Vol. XXVI, p. 20; 1883.)
   algens Wied.
3. Second segment of abdomen bearing at most four marginal macrochætæ ..... 4.
   Second segment of abdomen bearing at least ten marginal macrochætæ on the dorsum, abdomen wholly yellow, middle of dorsum of second and third segments covered with black macrochætæ; length, 14 mm. Colorado and Washington. (Trans. Amer. Ent. Soc., Vol. XIII, p. 297; October, 1886: *Dejeania.*) ..*hystricosa* Will.
4. First segment of abdomen on the sides largely or wholly yellow, the fourth yellow at least on the front corners..... 5.
   First segment wholly black, or at most with the hind angles narrowly yellow; front tarsi of female broadly dilated; abdomen black, the apex broadly, or the sides of the last three segments and apex of the last, or only the sides of the second and third segments, yellow; length, 10 to 13 mm. Canada; White Mountains and Franconia, N. H.; New Bedford, Mass.; Buena Vista, N. J., and North Carolina. (List of Dipterous Insects, Part IV, p. 722; 1849: *Tachina.*) .....*florum* Walk.
5. Palpi only half as long as the proboscis beyond the basal articulation, front of male one and one-half times as wide as either eye, head at base of antennæ much longer than at the vibrissæ, front projecting in front of the eyes one and one-half times the horizontal diameter of the latter; abdomen of male yellow, middle of first segment, a dorsal spot, and genitalia black; length, 12 mm. Los Angeles County, Cal. (Bulletin Soc. Ent. France, p. cxli; 1887: *Fabricia.*) .....*infumata* Bigot.
   Palpi almost as long as the proboscis, front of male two-thirds as wide as either eye, head at base of antennæ not longer than at the vibrissæ, front projecting in front of the eyes less than the horizontal diameter of the latter; abdomen yellow, usually marked with a black dorsal vitta or row of spots; length, 10 to 14 mm. Franconia, N. H.; North Carolina; Colo., and California. (Trans. Amer. Ent. Soc., Vol. XIX, p. 94; April, 1892. *Tachina* sp., Brauer and Bergenstamm *in litt.*) .*dakotensis* Town.

Genus EPALPUS Rond.

Epalpus Rondani, Nuovi Annali Sci. Nat. Bologna, Vol. II, p. 170 (6); 1850.

Our species have three sternopleural macrochætæ:

1. With four postsutural macrochætæ, hairs on sides of face black, femora largely or wholly black ..... 2.

   With only three postsutural macrochætæ; hairs on sides of face and the femora, tibiæ, and entire abdomen yellow; second and third segments of abdomen bearing discal and marginal macrochætæ; length, 9 to 11 mm. Colorado. (Biologia Cent.-Amer., Diptera, Vol. II, p. 23; April, 1888: *Saundersia. Epalpus* sp., Brauer and Bergenstamm *in litt.*) ..... *nigripilosa* v. d. W.

2. Abdomen shining, destitute of pollen, yellow, the fourth segment black; second segment bearing a discal cluster and a marginal row of about twelve macrochætæ; length, 10 to 13 mm. Summit County, Colo., and Siskiyou County, Cal. (Trans. Amer. Ent. Soc., Vol. XIII, p. 304; October, 1886: *Saundersia. Epalpus bicolor* Will., Brauer and Bergenstamm *in litt.*) .... *bicolor* Will.

   Abdomen black, the sides sometimes partly reddish, fourth segment marked with a large spot of gray pollen, sometimes a dorsal vitta of gray pollen on the third, second segment bearing a discal cluster of from four to twelve and a marginal pair of macrochætæ; length, 10 to 11 mm. Franconia, N. H.; Beverly and Hyde Park, Mass.; Maryland; North Carolina; Custer County, Colo.; Tenino, Wash., and California. (List of Dipterous Insects, Part IV, p. 708; 1849: *Tachina. Epalpus signifera* (Walk.) O. S., Brauer and Bergenstamm *in litt.*) ..... *signifera*[1] Walk.

Unrecognized species.—*E.* (*Saundersia*) *maculata* Williston, Trans. Amer. Ent. Soc., Vol. XIII, p. 304; November, 1886. N. Mex.

Genus BOMBYLIOMYIA Br. and Berg.

Bombyliomyia Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 131; 1889.

Our single species is yellow, the sides of the front, third joint of antennæ, arista, dorsum of thorax except the lateral margins, and a dorsal row of small spots on the abdomen, black; two postsutural and two sternopleural macrochætæ; length, 11 to 14 mm. Toronto, Canada; White Mountains, New Hampshire; Beverly, Mass.; Trenton, N. J.; Allegheny, Pa.; Utica, Lake George, and New York, N. Y.; Ohio; Colorado, and Washington. (Ausser. Zweif. Insekten, Vol. II, p. 293;

[1] In the Trans. Amer. Ent. Soc., Vol. XIII, p. 303, Dr. Williston doubtfully refers this species to the genus Saundersia, but in the Biol. Cent.-Amer., Diptera, Vol. II, p. 22, van der Wulp states that this reference is very doubtful, since Walker mentions the palpi in his description. This is the only species, however, from the eastern part of North America that at all agrees with Walker's description, and the fact that he mistook the folds in the mouth for palpi will not at all surprise any student familiar with the doings of that author.

1830: *Tachina*. *Tachina vivida* Harris, Rept. Insects Mass. Injurious to Vegetation, p. 612; 1841. *Hystricia testacea* Macquart, Diptères Exotiques, Vol. II, Part III, p. 201 [44]; 1842. *Tachina finitima* Walker, List of Dipterous Insects, Part IV, p. 707; 1849. *Hystricia fulvida* Bigot, Bulletin Soc. Ent. France, p. cvi; 1888. *Bombyliomyia abrupta* Wied., Brauer and Bergenstamm *in litt.*).....*abrupta* Wied.

Genus DEJEANIA Desv.

Dejeania Desvoidy, Essai sur les Myodaires, p. 33; 1830.

Our single species is yellow, the third joint of antennæ, arista, proboscis, dorsum of thorax, portions of the pleura and usually a dorsal row of spots on the abdomen, black; four postsutural and two sternopleural macrochætæ; front tarsi of male not ciliate on the side with short bristles, those of the female slightly dilated on the last four joints; length, 13 to 15 mm. Colorado. (Western Diptera, p. 343; April 30, 1877. *Dejeania* sp. *non corpulenta* Wied.,[1] Brauer and Bergenstamm *in litt.*).....*vexatrix* O. S.

Genus PARADEJEANIA Br. and Berg.

Paradejeania Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, VI, p. 147; 1893.

Our single species is yellow, the front, antennæ, proboscis, occiput, thorax except the hind margin, legs, and sometimes a dorsal vitta or row of spots and the fourth segment of the abdomen, black; wings smoky gray, calypteres yellow; four postsutural and three sternopleural macrochætæ; length, 16 to 18 mm. Manitou and Colorado Springs, Colo., and Santa Cruz and San Diego counties, Cal. (Neue Exot. Dipteren, p. 86 (137); 1867: *Dejeania*. *Jurinia rutilioides* Jaen., Brauer and Bergenstamm *in litt.*).....*rutilioides* Jaen.

Genus JURINIA Desv.

Jurinia Desvoidy, Essai sur les Myodaires, p. 34; 1830.

Our single species has the thorax blue-black, lightly gray pollinose on the front half, four postsutural and three sternopleural macrochætæ; scutellum and abdomen reddish, and having a slight violaceous reflection, calypteres and bases of the wings brown; length, 13 to 18 mm. West Virginia; Cumberland Gap, Ky.; Georgia; Georgiana and Lake

[1] Osten Sacken states, on page 256 of his well known Catalogue of North American Diptera, that after examining the type of *Tachina corpulenta* Wied. from Mexico he reached the conclusion that it belongs to the same species as his *Dejeania vexatrix*. In this, however, he was evidently in error, since Schiner, who also had access to Wiedemann's type of *corpulenta*, states in the Reise der Novara, Part Diptera, page 337, that in this species the front tarsi of the male have long bristly hairs on the inner side, which is not at all the case with *vexatrix*. Moreover, Brauer and Bergenstamm have compared our specimens of *vexatrix* with Wiedemann's type of *corpulenta*, and pronounce them specifically distinct.

Worth, Fla.; Texas, and Colorado. (Essai sur les Myodaires, p. 35; 1830. *Jurinia adusta* van der Wulp, Biologia Cent.-Amer., Diptera, Vol. II, p. 28; April, 1888. *Jurinia hystrix* Will. *non* Fabr., Brauer and Bergenstamm *in litt.*) ..... *metallica* Desv.

Genus JURINELLA, Br. and Berg.

Jurinella Brauer and Bergenstamm, Zweif. Kais. Mus. Wien, IV, p. 132; 1889.
Pseudohystricia Brauer and Bergenstamm, loc. cit.

This synonymy is original with the writer. Our species have four postsutural and three sternopleural macrochætæ:

Thorax densely yellowish pollinose, the hairs and those of the face and cheeks pale yellowish; abdomen strongly tinged with blue; length, 14 to 17 mm. Colorado. (Diptères Exotiques, Supplement IV, p. 145 [172]; 1849: *Hystricia. Pseudohystricia ambigua* Macq., Brauer and Bergenstamm *in litt.*) ..... *ambigua* Macq.

Thorax lightly bluish gray pollinose, the hairs and those of the face and cheeks black; abdomen not tinged with blue; length, 11 mm. Colorado. (Trans. Amer. Ent. Soc., Vol. XIII, p. 298; October, 1886: *Hystricia.*) ..... *soror* Will.

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[1] *Tachina orgyiæ* LeBaron, First Rept. Ins. Illinois, p. 16. 1871, is omitted in Osten Sacken's Catalogue, and was overlooked when preparing the preceding pages. It is a synonym of *Tachina mella* Walk.

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U. S. DEPARTMENT OF AGRICULTURE,

DIVISION OF ENTOMOLOGY.

CORRECTED INDEX TO BULLETIN No. 7, TECHNICAL SERIES.

Owing to imperfections and omissions in the index which is bound in with this bulletin an entirely new index has been prepared, and correspondents and others who receive the bulletin are requested to replace the old index with the corrected one, a copy of which is inclosed with this.

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* *Tachina orygiæ* LeBaron, First Rept. Ins. Ill., p. 16, 1871, is omitted in Osten Sacken's Catalogue, and in the preceding pages. It is a synonym of *Tachina mella* Walk.

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ERRATA.

Page 10, line 15 from below, place a star (*) before Leucarctia.
Page 23, lines 2 to 4, transfer the * to Ocyptera and erase Trichopoda plumipes *Fabr.*
Page 23, line 11 from below, erase "Phorichæta sequax Will."
Page 25, line 4, erase the * before Belvosia.
Page 26, line 13, for "Phorocera parva *Bigot*" read Phorocera leucaniæ *Coq.*
Page 36, couplet 98, for "Base" read Bend.
Page 88, line 10 from below, erase "Vol. VI."
Page 103, line 4, erase "Vol. VIII."
Page 110, line 9 from below, for "3" read 2.
Page 114, line 23, for "*tenthredinidarum* Town." read *exilis* n. sp. The former belongs to Frontina.
Page 119, line 11 from below, after "Ital." add Prodromus.
Page 126, line 14 from below, "From the type specimen" refers to *Metachæta atra.*